TEXTILE WORLD

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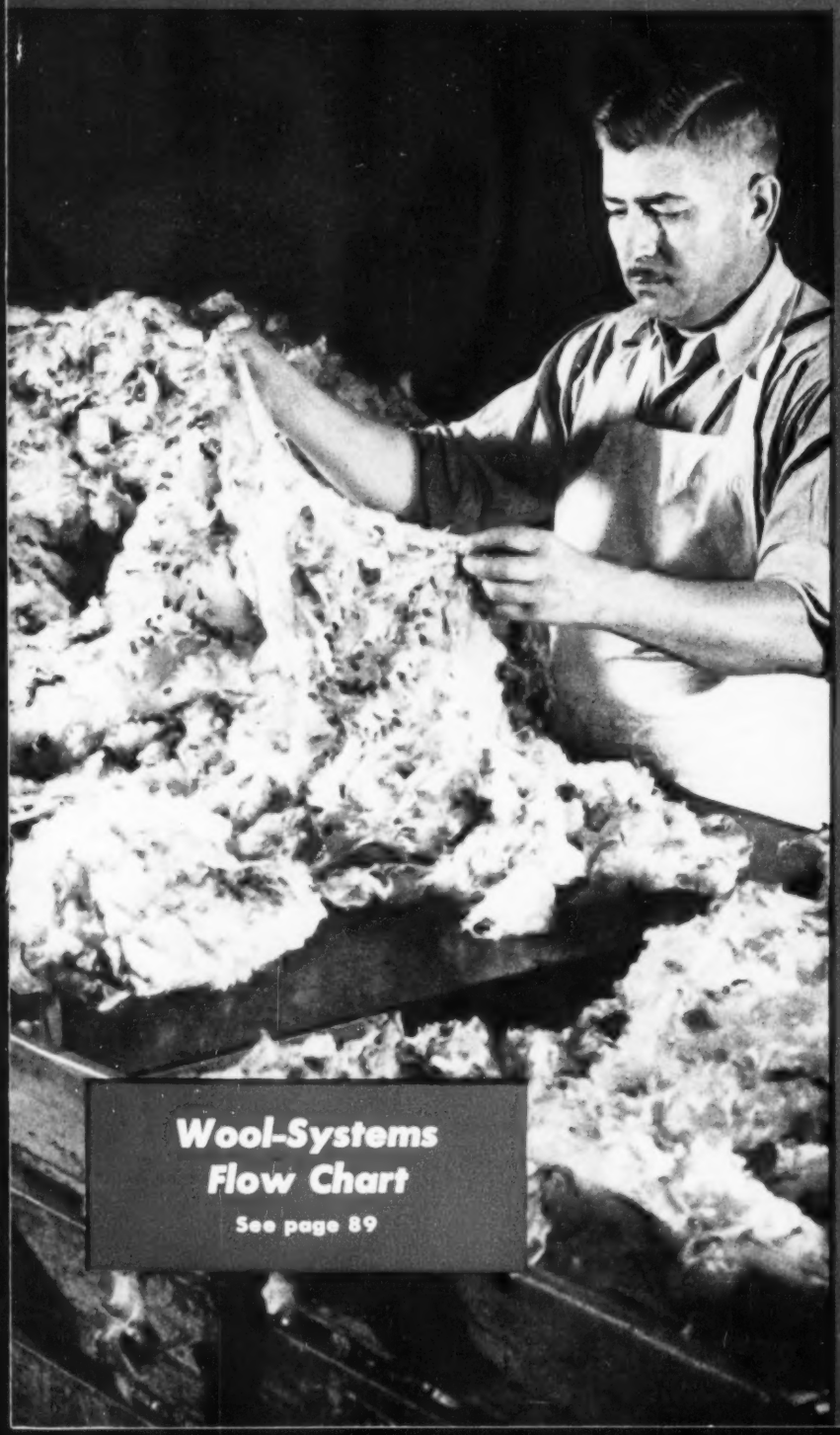

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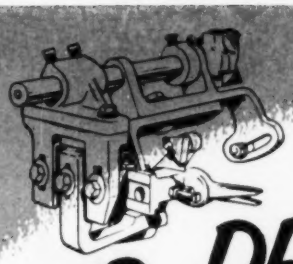

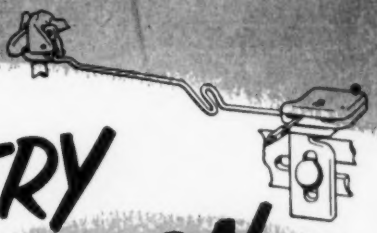

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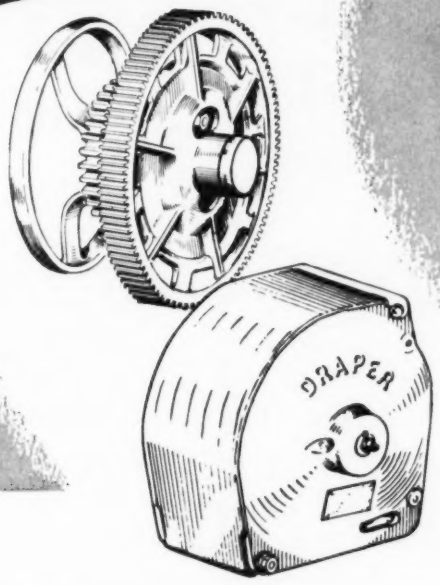

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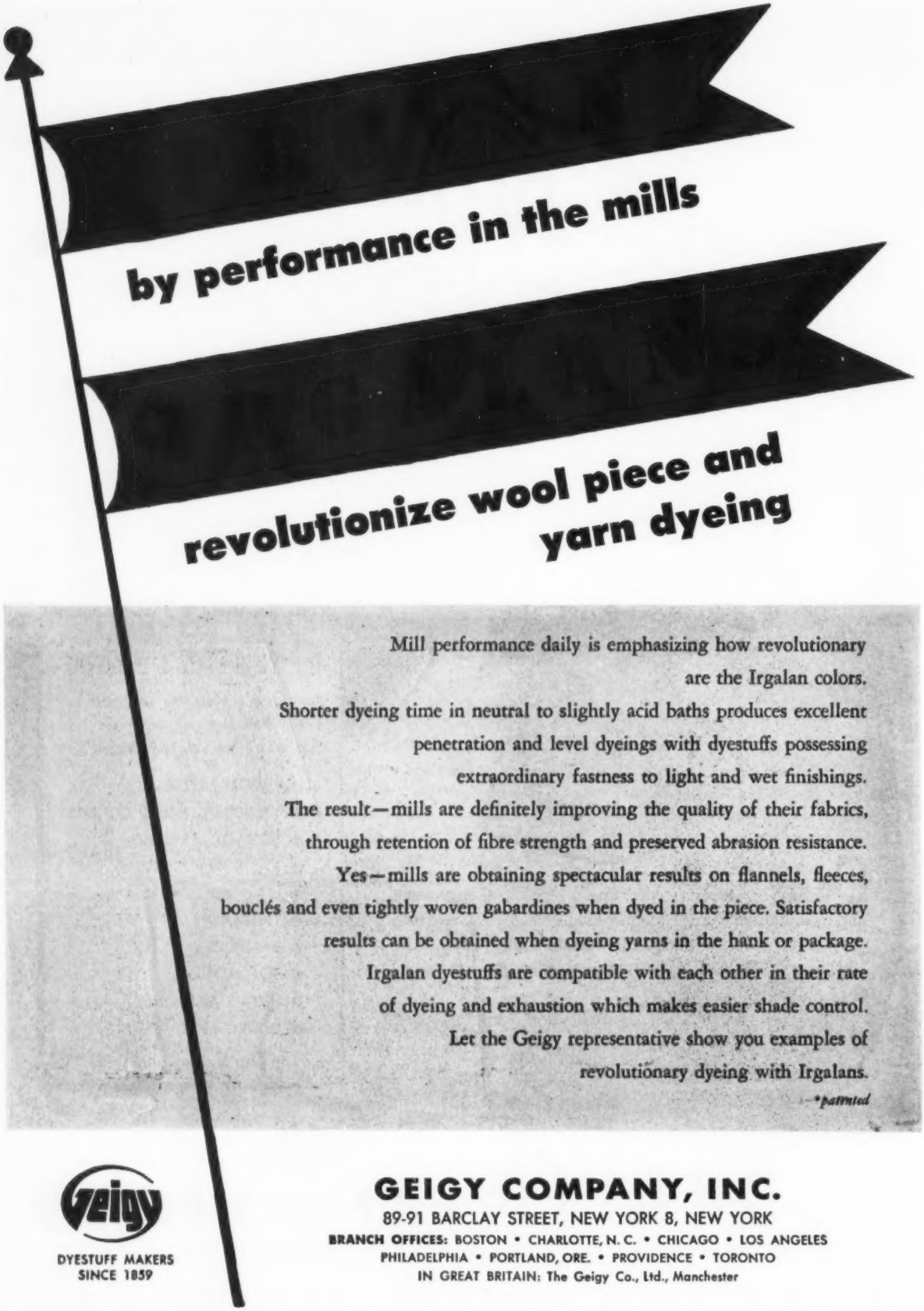

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THE Long-Range VIEW

If We Want Young Men—

Efforts are being made to increase the number of young men entering textile work. Scholarships are being set up, records of progress made by young men are being shown, speeches glamorizing the industry are being made, etc.

It is good that these steps are being taken. In the June graduating classes of the textile schools, there just were not enough men to go around to all the mills that sought them. However, these things are only the icing of the cake. The cake itself has some spots in it that repel more men than the icing will attract.

We don't suppose anyone can draw up a formula that will account for why students choose the industry or business they will prepare themselves for. Certainly the reputation of the industry or business and the history of its performance and human relations play a big part. The spots in the cake that we mentioned are areas where the textile industry's reputation and record are not good. In these areas, certain malpractices discourage young men from entering the industry.

The four practices that we hear criticized most often are:

1. The wholesale use of the ax

Now and then a mill suddenly decides to discontinue a whole department and fires men in droves. In one case a methods and standards department was chopped off, in another a research and development group, in another a group of men hired primarily because they were good baseball players.

We have no doubt that the men who ordered the ax in these cases had what they thought were good reasons. Certainly expenses were reduced. However, the men who got the ax were hired over a period of years and were fired through no fault of their own. Business conditions did not suddenly get so bad that chopping off these activities was a necessity. All that happened was that somebody changed his mind, or a new boss not in sympathy with the activity came into power. Whichever it was, to everyone else the action looked sudden, arbitrary, arrogant, and inhumane.

Actions like these over the years send hundreds of men out of mills bitter against the textile industry to spread their bitterness where it is picked up by quick young ears. If at this moment all these bitter men were enthusiastic supporters of the textile industry, we would have no need for scholarships, speeches, and glamorizing to attract young men to the industry.

2. Capable men are too often stymied

Every young man trying to make up his mind as to what work he wants to follow weighs his possibilities for advancement as best he can. Much can be said about the young men who are about one-hundredth as good as they think they are, but much can be said also about mills holding capable men back because there are good men ahead of them in the organization.

Quite often you hear some older man who's got it made sounding off to the effect that there's more room at the top than anywhere else and that the great need now is for leaders.

That's a lot of eyewash. There are more well-educated, well-informed, well-equipped men in the industry and business now than ever before. If leaders are not available in overabundant supply, it's because opportunities for development have been too jealously or too parsimoniously guarded.

3. Advancement goes too often to the "fair-haired boy"

One of the foundation stones in every American's mental equipment is the thought that everybody has equal opportunities for advancement.

Unfortunately, in every industrial and business organization in the country—and we've seen few mills that were exceptions—the institution of the "fair-haired boy" crops up. Earmarked for advancement from the day he walks in, the fair-haired boy has little to do except wait and grow a little older. In some cases, he is a capable man and could hold his own in open job competition. In other cases, he has to be covered up for any number of times.

4. To enter the top inner sanctum, you have to be born to it or marry it

The textile industry is primarily a small-business industry. No single mill is large in comparison with plants such as a steel mill or an automobile factory. Therefore, there is a great host of mill owners and their relatives to fill the top mill jobs. Only occasionally, in big organizations composed of several mills, are there more really good jobs than enough to take care of the families. Therefore, it is only rarely that a really good job is open to competition.

What these four conditions do, in effect, is to impose very definite job hazards and advancement limitations on men not favored by birth or marriage. It is, therefore, not surprising that hundreds of young men from textile families and areas are not willing to gamble their futures with the industry.

If mills would attack these conditions with minds seriously made up to correct them, beating the drums to attract young men would not be necessary.

J. M. Thomas

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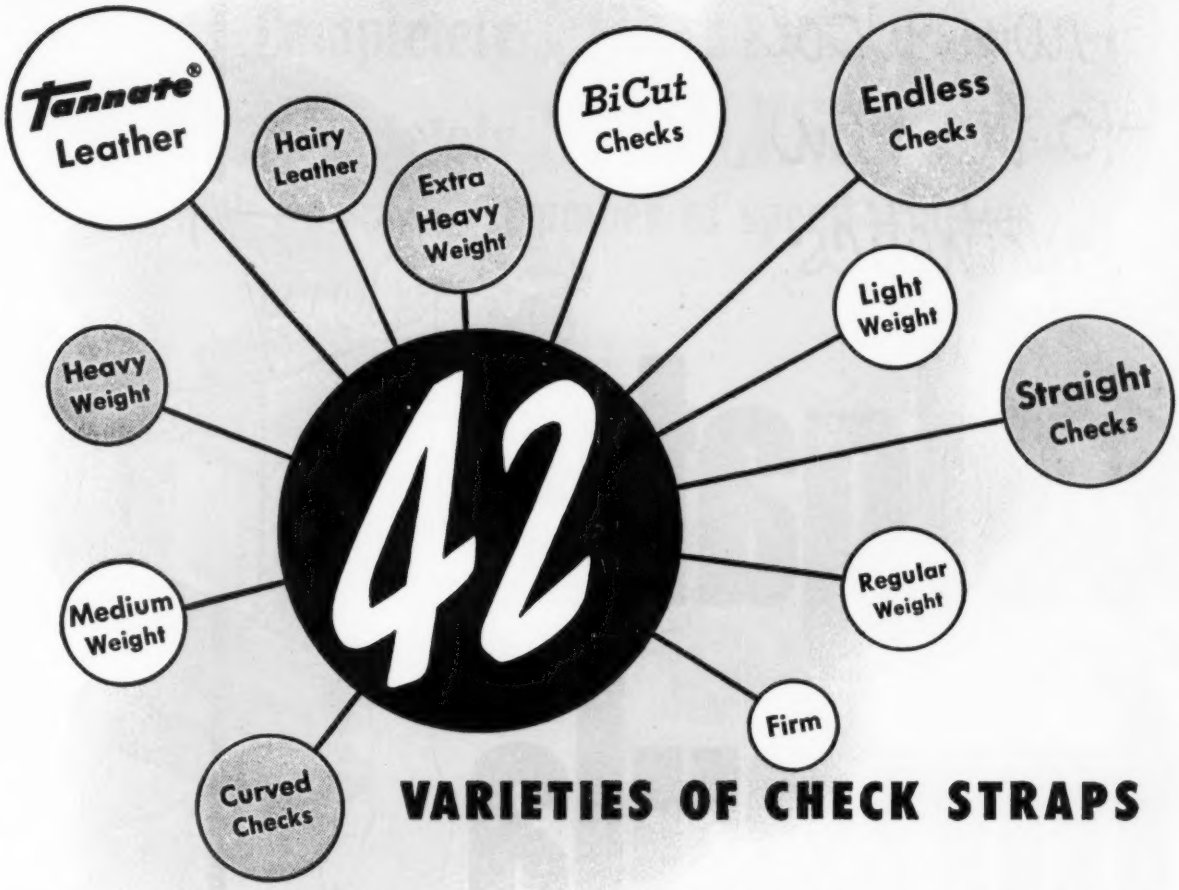

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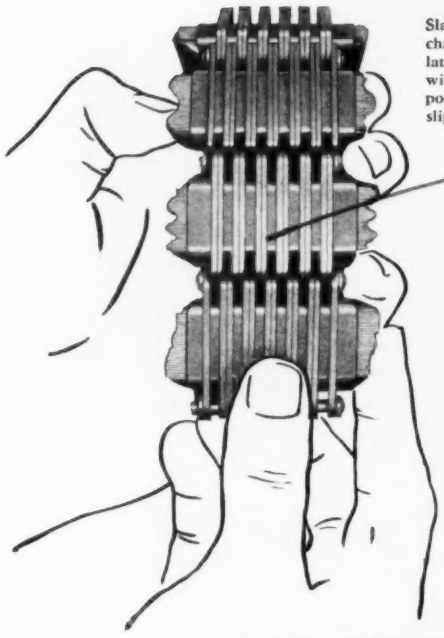
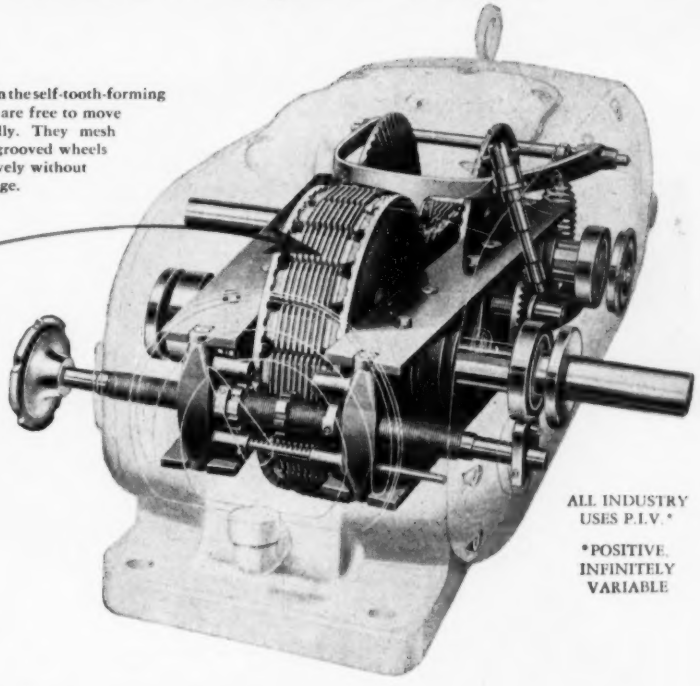


Slats in the self-tooth-forming chain are free to move laterally. They mesh with grooved wheels positively without slippage.

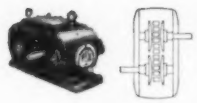


ALL INDUSTRY USES P.I.V.*

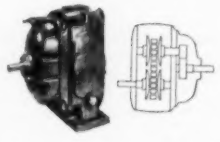
*POSITIVE, INFINITELY VARIABLE

P.I.V. Variable Speed Drive gives you exact selection from maximum to minimum speed

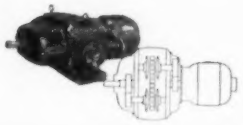
4 of 16 P.I.V types, ½ to 25 hp. — ratios to 6:1
Horizontal or Vertical Mountings



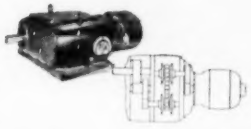
Basic Positive, Infinitely Variable Speed Drive. Compact.



P.I.V. with single reduction input or output helical gears.



Motorized P.I.V. with single reduction input and output helical gears.



Motorized P.I.V. with single reduction input and double reduction output helical gears.

ONLY Link-Belt's P.I.V. Variable Speed Drive uses self-tooth-forming chain to provide positive, stepless speed changing. The chain meshes with grooved wheels, transmits power without wasteful slip.

What's more, Link-Belt's P.I.V. changes speeds accurately under full load, delivers full-rated horsepower to your machines. That's because P.I.V. is not dependent on friction for power transmission. Its all-metal construction is not affected by atmospheric conditions.

Adjustment is easy. You can obtain an infinite number of speeds with manual, electric, pneumatic or hydraulic controls . . . hold the exact speed you need at any setting.

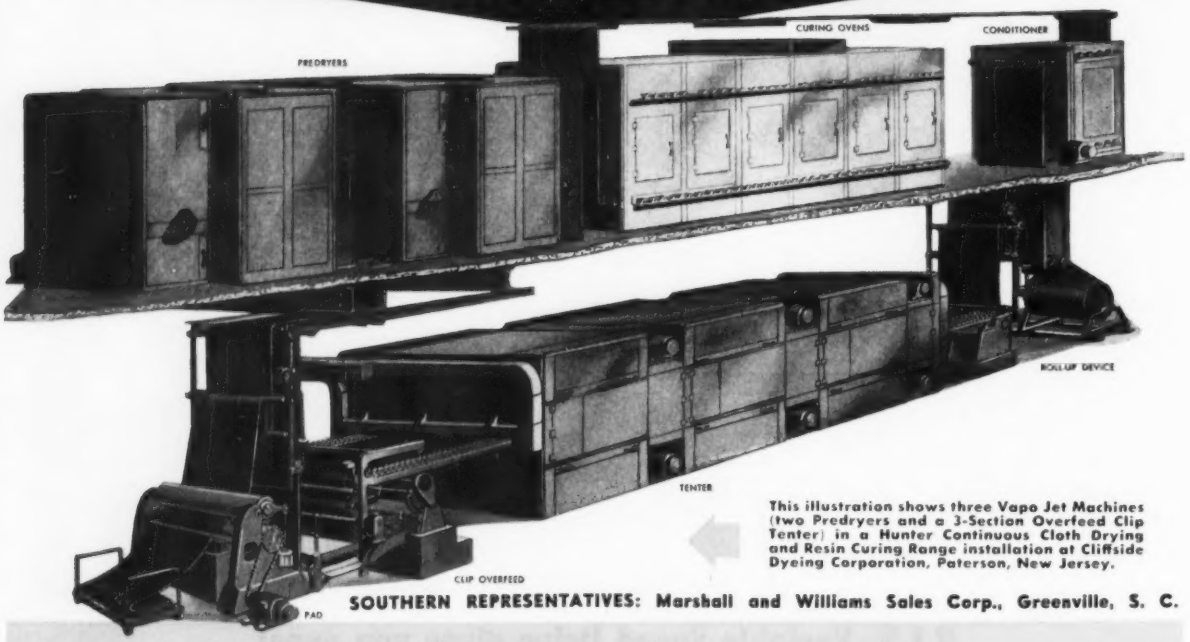
There may be a process in your plant that requires exact, variable speed transmission. If so, it will pay you to contact your nearest Link-Belt office. They'll show you how P.I.V. can increase the flexibility and efficiency of your machines. Send for Catalog No. 2274.

LINK-BELT
P.I.V. VARIABLE SPEED DRIVE

LINK-BELT COMPANY: Plants: Chicago, Indianapolis, Philadelphia, Colmar, Pa., Atlanta, Houston, Minneapolis, San Francisco, Los Angeles, Seattle, Toronto, Springs (South Africa), Sydney (Australia). Sales Offices, Factory Branch Stores and Distributors in Principal Cities. 13,116

NEW! EXCLUSIVE HUNTER VapoJet

FASTEST...MOST EFFICIENT DRYER EVER MADE!

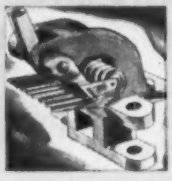


This illustration shows three Vapo Jet Machines (two Predryers and a 3-Section Overfeed Clip Tenter) in a Hunter Continuous Cloth Drying and Resin Curing Range installation at Cliffside Dyeing Corporation, Paterson, New Jersey.

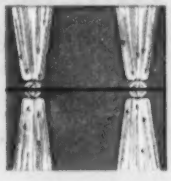
SOUTHERN REPRESENTATIVES: Marshall and Williams Sales Corp., Greenville, S. C.

Patented, superheated steam process boosts drying speeds to limits never thought possible

and does a better job!



PATENTED CLIPS ingeniously designed to overfeed as much as 20% on a wide variety of fabrics with gentle firmness and accuracy. Comb-type lower plates also permit uniform drying of the selvedges. The only clip which can be overfed.



SUPERHEATED STEAM vapor jets at a velocity of a mile a minute impinge on cloth simultaneously from above and below. Controlled fabric drying, at vaporization temperature, is most efficient method yet developed ... undesirable fabric overdrying is eliminated.

EXCLUSIVE PATENTED TELESCOPIC NOZZLES make it possible to direct the high velocity jets of vapor evenly over the cloth at exceedingly close range. These nozzles automatically adjust to changes in fabric widths.

TIME AND SPEED. The many special, patented design features of the Vapo Jet make it possible to obtain more efficient evaporation than can be accomplished through any other type of air drying system. This high evaporation capacity saves space, time and money.

BETTER FINISH. Processes all types of fabrics from the most delicate rayon crepes to heavy worsteds without any great or time-consuming adjustments. Controlled drying results in fabric finishes that meet the highest standards for both appearance and handle.

JAMES HUNTER MACHINE COMPANY

BUILT BY HUNTER ... IT'S DEPENDABLE

JAMES HUNTER MACHINE CO. Hunter NORTH ADAMS, MASS.

NORTH ADAMS, MASSACHUSETTS FOUNDED 1847

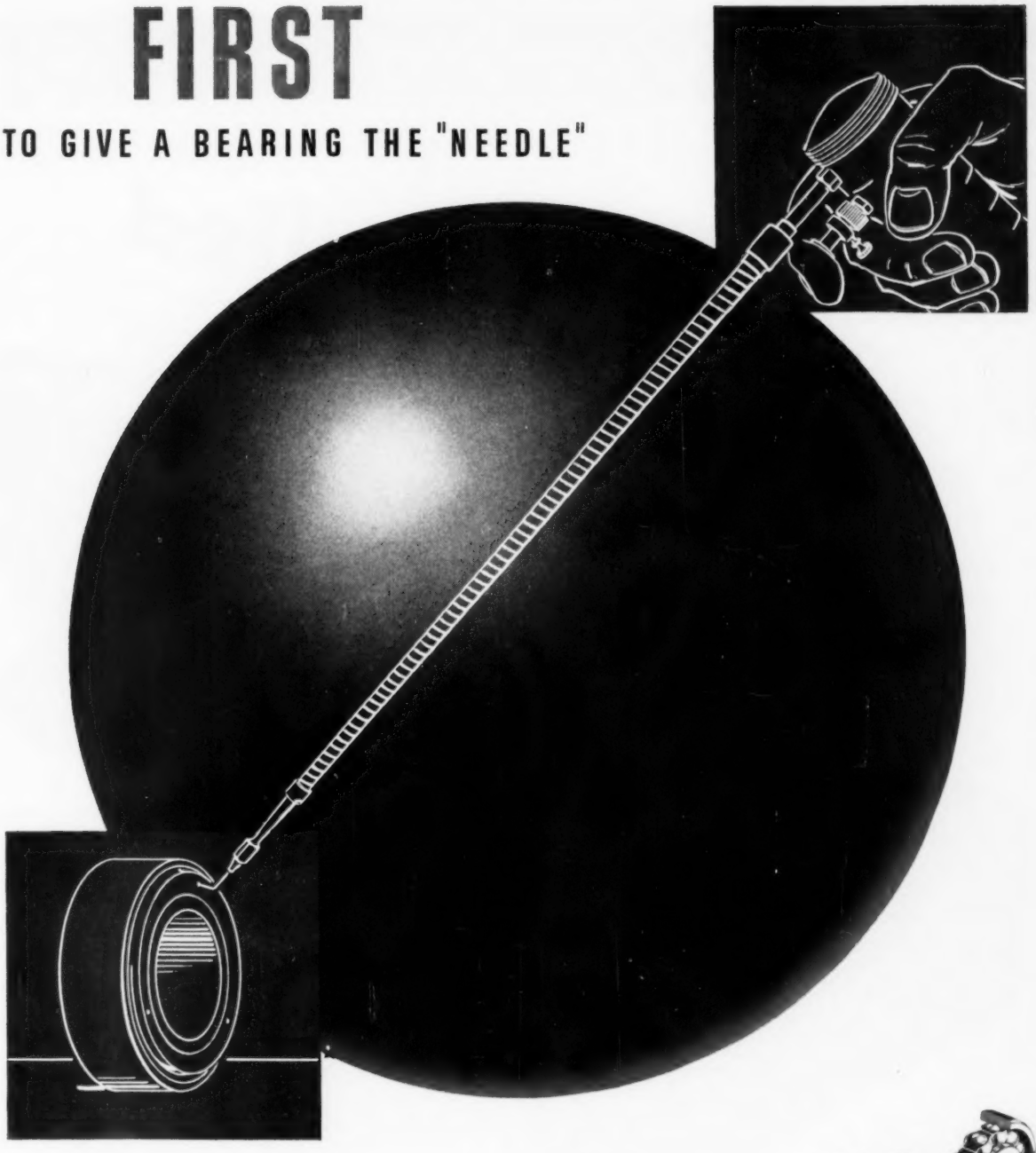
NO OTHER DRYER GIVES YOU ALL THESE MONEY-MAKING FEATURES!

- SUPERIOR ECONOMY
- GREATER CAPACITY
- LESS FLOOR SPACE
- SAFER DRYING
- BETTER FINISH
- CONTROLLED SHRINKAGE

DUNGLER SYSTEM

FIRST

TO GIVE A BEARING THE "NEEDLE"



Originator of the Sealed-for-Life type of ball bearing, New Departure was also the first to develop a method of revitalizing the sealed-in lubricant.

Ball bearings can stand up indefinitely under the loads imposed by many textile machines *IF* the life of their original lubricant can be extended. New Departure's method does just that, injecting the proper amount of oil into the bearing via a hollow needle.

If you have a textile application that demands extra long life from supporting bearings, under high speeds or high temperatures, be sure to investigate New Departure's sealed bearings and injection-relubrication system! Send for complete data on New Departure injector seal bearings.

NOTHING ROLLS LIKE A BALL

NEW DEPARTURE

BALL BEARINGS

NEW DEPARTURE • DIVISION OF GENERAL MOTORS • BRISTOL, CONNECTICUT
Also Makers of the Famous New Departure Coaster Brake

Unequalled

No Other Picker Can Match Denman's Consistent Record of Lowest Cost Per Loom Per Year

Besides long lasting qualities, DENMAN PIONEER Pickers are precision made to give perfect shuttle throw without damage to other loom parts.

Made by
DENMAN Tire and Rubber Co.

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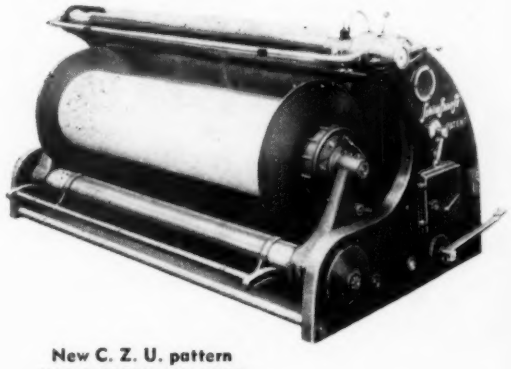
THE TERRELL MACHINE COMPANY, INC.

CHARLOTTE, N. C.

For more information, write direct or use Reader Service post card.

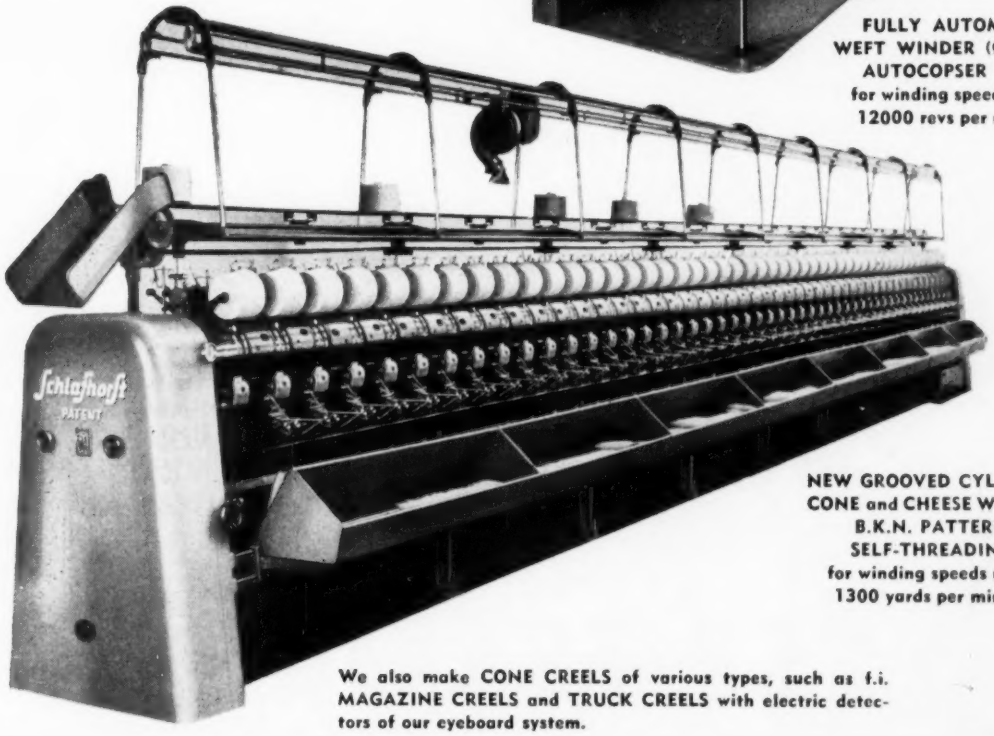
MODERN MACHINERY FOR WINDING AND WARPING

....Schlafhorst.... unionmatex



New C. Z. U. pattern
HIGH SPEED WARPER
Extraordinary production
Greatest simplicity

FULLY AUTOMATIC
WEFT WINDER (QUILLER)
AUTOCOPSER A.S.E.
for winding speeds up to
12000 revs per minute

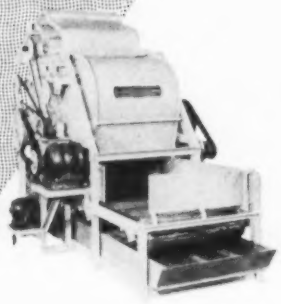


NEW GROOVED CYLINDER
CONE and CHEESE WINDER
B.K.N. PATTERN
SELF-THREADING
for winding speeds up to
1300 yards per minute

We also make CONE CREELS of various types, such as f.i. MAGAZINE CREELS and TRUCK CREELS with electric detectors of our eyeboard system.

W. SCHLAFHORST & CO · M.GLADBACH · GERMANY

COTTON IS MONEY DON'T WASTE IT



Every bit of spinnable fibre you see in your waste represents a loss of money!

CEN-TENNIAL'S SRRL OPENER is designed to eliminate this waste . . . and does an excellent job of it.

For instance: one mill (we'll give you the name on request) reports a 14.3% decrease of spinnable fibre in waste which amounted to a yearly saving of $22,400 on cotton stock. The point is, CEN-TENNIAL can save your cotton and save you money . . . CAN YOU AFFORD *NOT* TO EQUIP YOUR OPENER ROOM WITH THE CEN-TENNIAL OPENER?

CEN-TENNIAL
COTTON GIN COMPANY

Columbus, Georgia

* For more information, write direct or use Reader Service post card.

Which One...for Which Job?

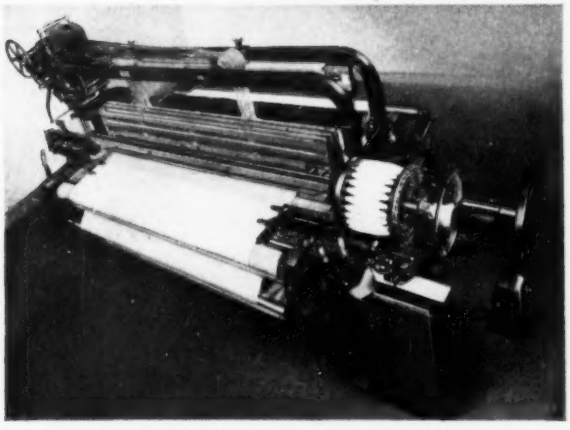
What are you shooting at? Single-color filling mixing fabrics? C&K has this type of loom, equipped with rotary magazines and head motions or end cams. Or do you have your sights set on something fancy in cotton, wool, synthetics or blends? C&K has a complete line of the most modern looms for these fabrics, too.

In fact, whatever you weave, C&K has the looms you need to produce the greatest amount of salable cloth at lowest cost per yard. These looms can be delivered promptly . . . installed in your weave room without special preparation or personnel . . . and quickly readied to run by your present weavers and loomfixers. So — "what are we waiting for"? *See C&K today about the looms you need right now.*

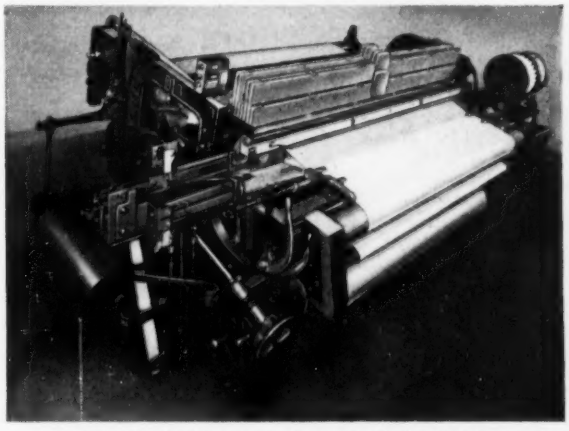
This "Invisible Trademark" Stands Back of the Trademarks of the World's Finest Fabrics . . . which are WOVEN Fabrics.

CROMPTON & KNOWLES Loom Works
WORCESTER 1, MASSACHUSETTS, U. S. A.
Philadelphia, Pa. • Charlotte, N. C. • Allentown, Pa. • Crompton & Knowles Jacquard & Supply Co., Pawtucket, R. I.

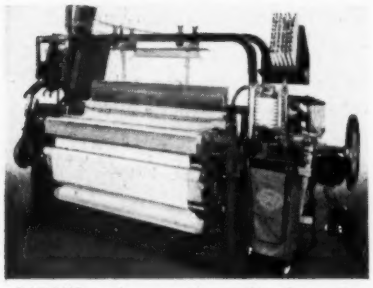
WORLD'S LONGEST LINE OF LOOMS...



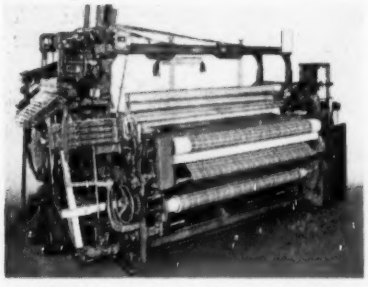
NEW SINGLE-PURPOSE C&K 2 x 1 BOX FILLING MIXING LOOM equipped with Rotary Magazine and *Head Motion* . . . one of the newest additions to C&K's *complete line* of performance-proved FM Looms.



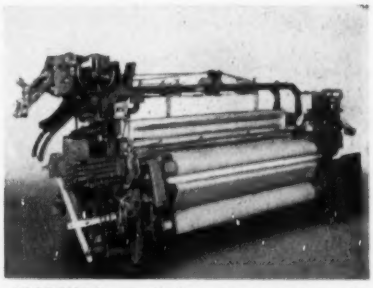
NEW SINGLE-PURPOSE C&K 2 x 1 BOX FILLING MIXING LOOM equipped with Rotary Magazine and *End Cam*. C&K also builds multi-purpose FM Looms with Call Box Feature (see W, C and S Looms below).



S LOOMS are the most modern machines for weaving nylons, rayons, acetates, combinations and pure silks. Built in all widths . . . call box . . . *filling mixing* . . . bobbin-changing . . . shuttle changing . . . many shuttle sizes . . . pick and pick . . . Jacquard . . . and what other features do you want?



C LOOMS for widest flexibility in weaving cottons, spun rayons and blends for towels, blankets, decorative fabrics, bedspreads, handkerchiefs, shirtings, suitings, dress goods. Built in all widths . . . bobbin-changing . . . shuttle changing . . . convertible . . . tri-color . . . pick and pick . . . leno motions . . . all-purpose take-up . . . 30" beams . . . and many more C&K-engineered advantages.



W LOOMS for unmatched versatility in weaving woolens, worsteds, upholstery and blended fabrics. Made in all widths . . . bobbin-changing . . . *filling mixing* . . . tri-color . . . convertible . . . pick and pick . . . and many other features.

"But, I've been doing this every day since I saw what **Swift's Soaps** *do for our textiles!"*

Leave it to a textile man—he really believes in Swift's Soaps. At least, that's our impression when we talk to all the successful operators who consider Swift's Soaps tops for scouring, dyeing, fulling and other specialized service.

You, too, will find that Swift has the *right* soap for *every* textile need. And more, Swift's Soaps combine proper uniformity of composition with excellent physical form.

If you're faced with a unique, especially tough soap requirement, call on us. Our years of soap-making experience can help you find a soap that fits your particular operation.

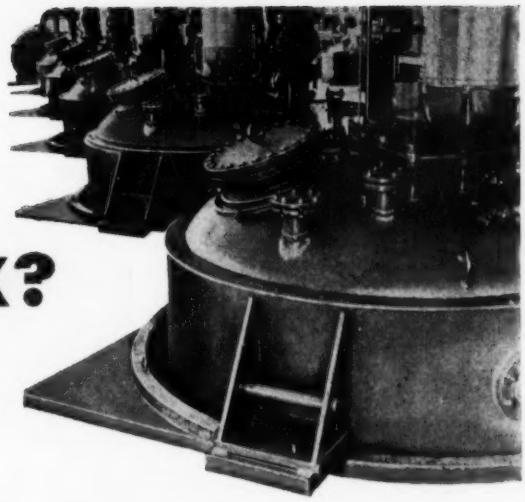
Listed below are some of Swift's fine soaps. You can order any one of them from Swift's distribution points coast to coast and expect immediate delivery.

Vertex Flakes • Morrow R. O. Flakes • 557 Flakes
White Ribbon Flakes • Wool Flakes

Call **SWIFT** first for **SOAPS**

SWIFT & COMPANY
Soap Department, Chicago 9, Ill.

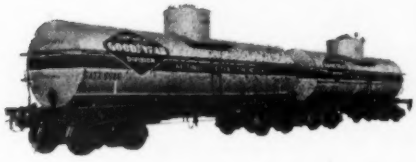
For more information, write direct or use Reader Service post card.



Looking for LATEX?

for coating
for saturating
for bonding

then, look to GOODYEAR



GOODYEAR produces a number of synthetic latices – latices developed through knowing research–latices made to the highest standard of quality and uniformity – latices backed by years of experience in the production of resins and rubbers.

Goodyear manufactures nitrile latices, styrene copolymer latices and vinyl latices. These are available in a range of monomer ratios, solids contents and types of stabilization to give you a wide choice in physical properties and processing characteristics. They also are mutually compatible for even greater versatility and application.

Goodyear latices have many uses in many industries. You'll find them in paints, coatings, finishes, impregnants, saturants, sizings and adhesives in the rubber, plastics, packaging, paint, paper and textile fields.

And, with Goodyear latices you'll find SERVICE –full technical assistance, ample sampling, efficient handling and delivery according to schedule. For synthetic latices as you want them–when you want them–look to Goodyear. For full information, write to:

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Butadiene-acrylonitrile copolymers

Medium to high nitrile content

High solids content

Three types of stabilization

STYRENE COPOLYMER TYPE:

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Butadiene-styrene copolymers
Medium styrene content
High solids content

Pliolite Latices–"100" Series
Butadiene-styrene copolymers
High styrene content
Medium solids content

VINYL TYPE:

Pliovic Latices–"300" Series
Vinyl copolymers
High vinyl content
High solids content

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PERFECT TEAMS

for Perfect Warps and Knitting AT ITS BEST!

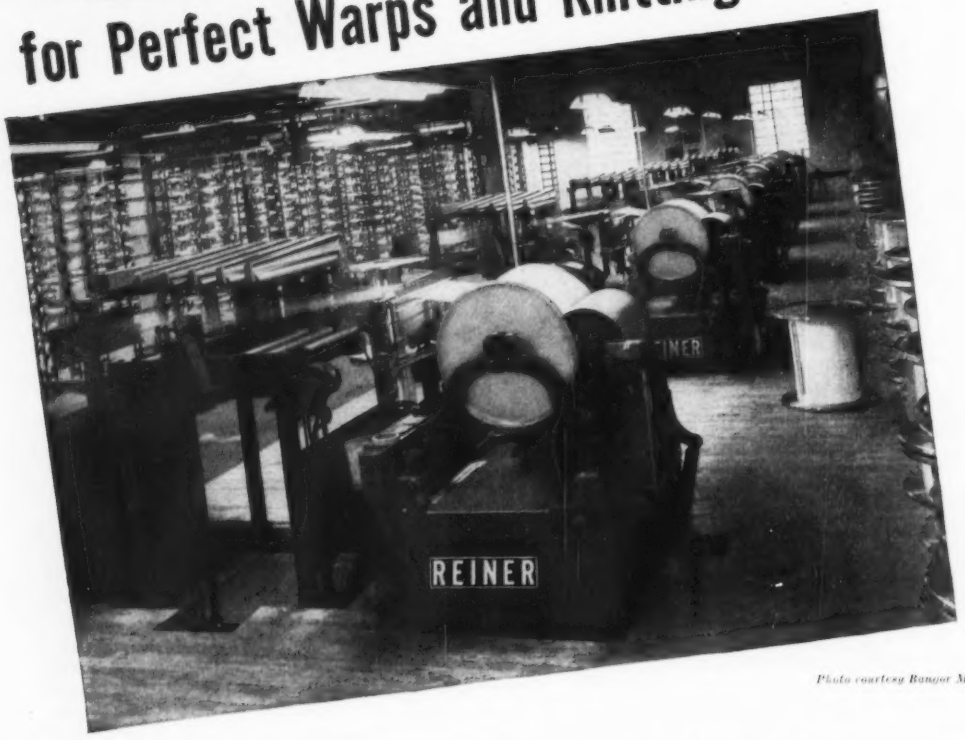

Photo courtesy Bangor Mills

REINER WARPERS AND CREELS are a must for perfect knitting, your guarantee for faultless quality. Reiner Warpers and their patented, time-saving and fully automatic Yarn Storage Device are today operating in more mills than ever before.

No wonder! Reiner Warpers are built for rugged, economic 'round the clock operation. Featured are the patented fan comb arrangement nearest the warp spool with no intervening rollers or guides between fan comb and warp spool, thus keeping the yarn sheet even and always in gauge. Other features include: spring loaded beam supporters and arrester bars—stepless warping speed control—a speed selector to maintain a pre-set speed throughout the run—shock absorbers to dampen pressure roller motion—brakes acting on beam as well as on pressure roller—speed indicator to regulate for running quality of yarn—yardage counter—predetermined electric shut-off counter—adjustable pressure roller—automatic stops in case of yarn break—etc.

THE REINER PATENTED YARN STORAGE device is electrically operated by a hand lever with automatic upper and lower safety stops. Its action rolls back sufficient yardage to take care of any yarn break, never loses tension, always keeps the yarn sheet in perfect alignment. The drive motor of the warper works automatically in conjunction with the storage device, releasing or rewinding yarn, as needed.

In short, Reiner Warpers and Creels are the most efficient team on the market. Warpers in widths up to 84" with flange diameters to suit all requirements. All Reiner preparatory equipment can readily be used with any other make of machinery.

We are the only company offering Tricot, Raschel and Simplex Machines plus all preparatory equipment, such as Warpers and Creels, from one single source with one high standard of manufacture and an efficent spare part and repair service.

Ask for our richly illustrated catalogs.

1903 50th Anniversary 1953

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Take Bus Nos. 61 or 67, from Platform No. 60, Port Authority Bus Terminal, 41st Street and 8th Avenue, New York City. Get off at Pleasant Avenue, Weehawken, New Jersey. From there turn left and walk through the underpass up to Gregory Avenue . . . TELEPHONE UNION 7-0502, 0503, 0504, and 0505. From New York City call LONGACRE 4-6882.

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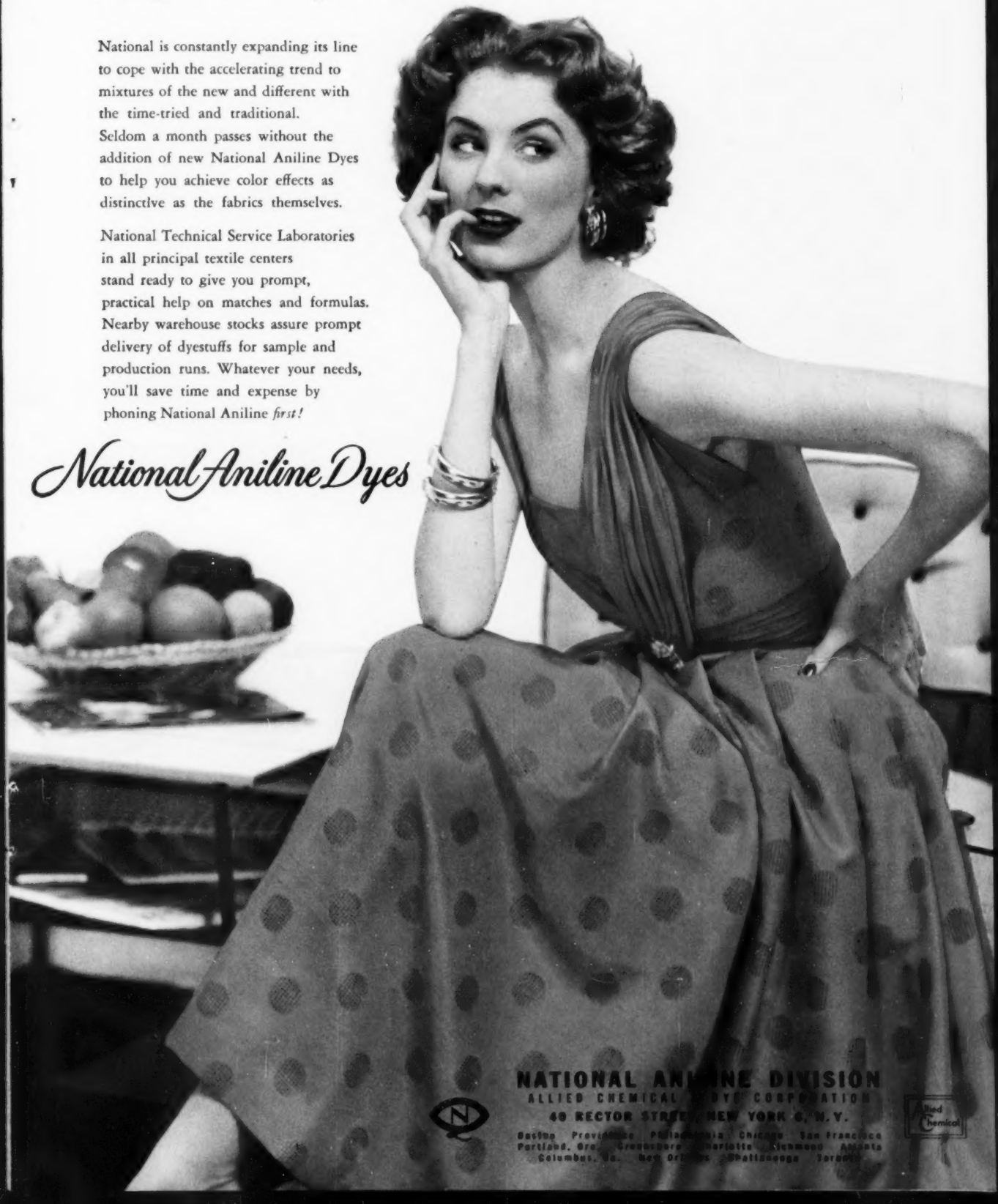
Bright new colors for your new prints and weaves

National is constantly expanding its line to cope with the accelerating trend to mixtures of the new and different with the time-tried and traditional. Seldom a month passes without the addition of new National Aniline Dyes to help you achieve color effects as distinctive as the fabrics themselves.

National Technical Service Laboratories in all principal textile centers stand ready to give you prompt, practical help on matches and formulas. Nearby warehouse stocks assure prompt delivery of dyestuffs for sample and production runs. Whatever your needs, you'll save time and expense by phoning National Aniline *first!*

National Aniline Dyes



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10,000 Bales Saved Last Year!

Pneumafil* Saves Waste

Pneumafil Equipment operating on spinning, last year literally plucked 10,000 bales of spinnable fibers out of the air.

Studies made by mills themselves reveal that Pneumafil Equipment collects from the air an average of 575 pounds of spinnable fiber per frame per year . . . excluding the material recovered from the sweep down. This fiber is not down-graded but is re-used by mills in their regular mix.

With this much fiber removed from the air, naturally there is less cleaning. Yes, Pneumafil* equipped frames are cleaner frames . . . and Pneumafil* equipped mills are cleaner mills . . . because Pneumafil* saves cleaning waste fiber *from each spinning frame each year.*

Add to this normally expected labor savings of 33% . . . and the resultant improvement in quality and there is only one conclusion . . .

Pneumafil* is the best investment you can make.

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Sales Offices: Needham Hts., Mass.—Atlanta

Automatic Voting Machine Corporation casts its vote for **ES COMPRESSORS**

Voters in 29 different states and the Territory of Hawaii indicated their choice in the November elections by turning levers on machines made by the Automatic Voting Machine Corp. of Jamestown, N. Y. This company and its predecessors have been engaged in the development and production of automatic voting equipment since 1898.

When it came to choosing a compressor to aid in its manufacturing processes back in 1934, this leader in its field chose the leader in the compressor field . . . Ingersoll-Rand's ES compressor. Satisfaction was proven when the company chose a duplicate ES compressor in 1947 to take care of its increasing air power needs. Both machines have been operating since that time, supplying compressed air to punch and drill presses and a variety of I-R air tools.

The ES compressor is designed to stand up under heavy-duty, 24 hour continuous full-load service over many years. Efficiency stays high; maintenance stays low. Sizes 5 to 125 hp with pressures from 5 to 150 psi.

The ES is of the double-acting crosshead type and is equipped with highly efficient, durable and quiet-operating Ingersoll-Rand Channel Valves.

Whatever your compressed air requirements, Ingersoll-Rand has a size and type compressor that will best serve your needs. A call to your nearest I-R branch will bring complete details.

Ingersoll-Rand

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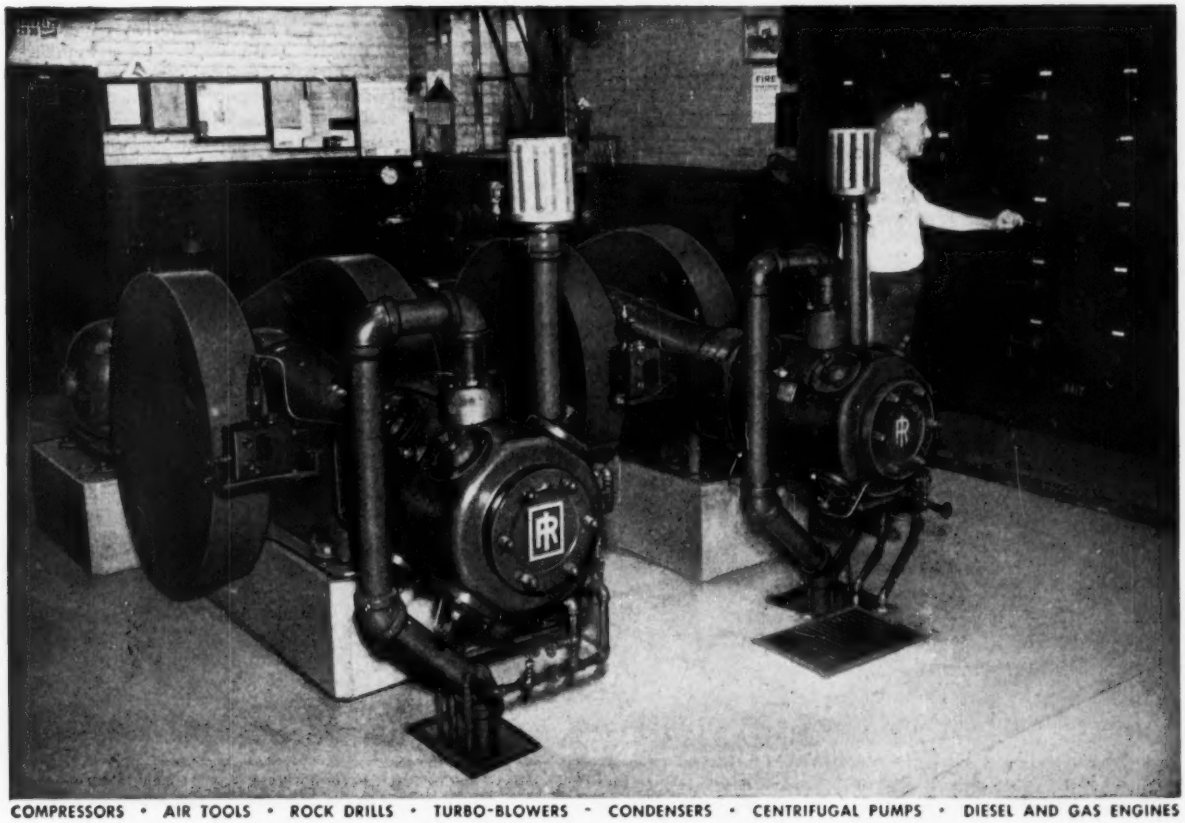


COMPRESSORS • AIR TOOLS • ROCK DRILLS • TURBO-BLOWERS • CONDENSERS • CENTRIFUGAL PUMPS • DIESEL AND GAS ENGINES

basic

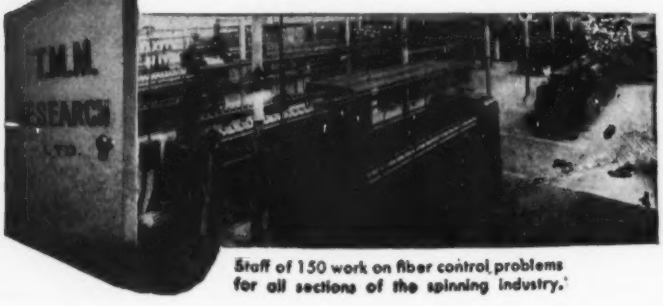
You're in business to make money and *the efficiency of your machinery has a lot to do with profits.* Platt machines are developed in co-operation with the world famous T.M.M. Ltd. spinning research laboratory, built to rigid specifications and **proven in mills throughout the world.** This is the type of machinery that is basic to the successful operation of a cotton mill: highly productive, economical and of long life. Atkinson, Haserick would be glad to show you the proof.

basic CARDING

EVEN, NEPLESS WEBS . . . . . .

With Platt's Revolving Flat Card, accurate settings are easy to obtain and hold, insuring the production of an even, nepless web for both light and heavy carding. There is an exceptionally strong cross rail construction and rigid foundation. Vibration is virtually eliminated and air currents minimized. Cut staple fibers can be worked very successfully on this card. Standard widths of 40" or 45".

PLATT BROS.
(SALES) LTD.
OLDHAM, ENGLAND



Staff of 150 work on fiber control problems for all sections of the spinning industry.

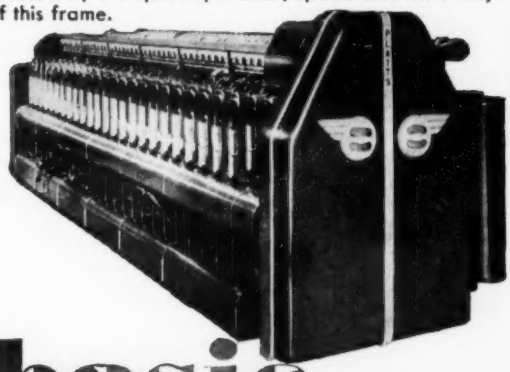
Laboratory provides continual information on all processes from bale to plied yarn.

For more information, write direct or use Reader Service post card.

basic ROVING

FIBER AND TWIST CONTROL...

The new Platt M.S.2 High Draft Roving Frame operates with great efficiency at high speeds. Three drafting zones give unprecedented fiber control through a wide range. A stronger roving is formed by inserting more of the total twist close to the nip of the front roll. The firm roving sheds little fly. You will be impressed by the quiet operation, speed and efficiency of this frame.



basic SPINNING

LARGE PACKAGES, HIGH SPEED...

The Platt M1 Ring Spinning Frame is a practical, proven frame for large packages. It has a choice of high drafting arrangements and a new spring arm roller weighting that adjusts to a wide range of staple lengths without altering the nip pressure. The simplified headstock has central lubrication, few gears and flexibility of turns per inch. Roller bearing spindle needs routine maintenance at only 2,500 hour intervals.

Actual conditions in opening, picking, carding and spinning rooms are reproduced in the laboratory.

a management responsibility

Don't you owe it to your mill to investigate ALL the new processes, new fibers, new machinery. A visit to our Charlotte display rooms would be time well spent. We are engineers and agents for some of the finest machinery developed in England.

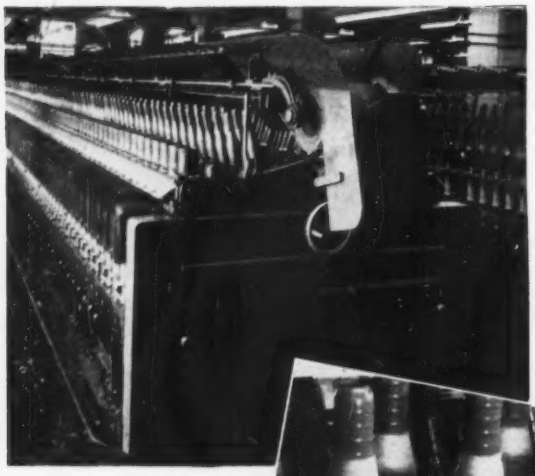
Atkinson, Haserick & Co.

Textile Machinery Agents and Engineers Since 1823

a.h.

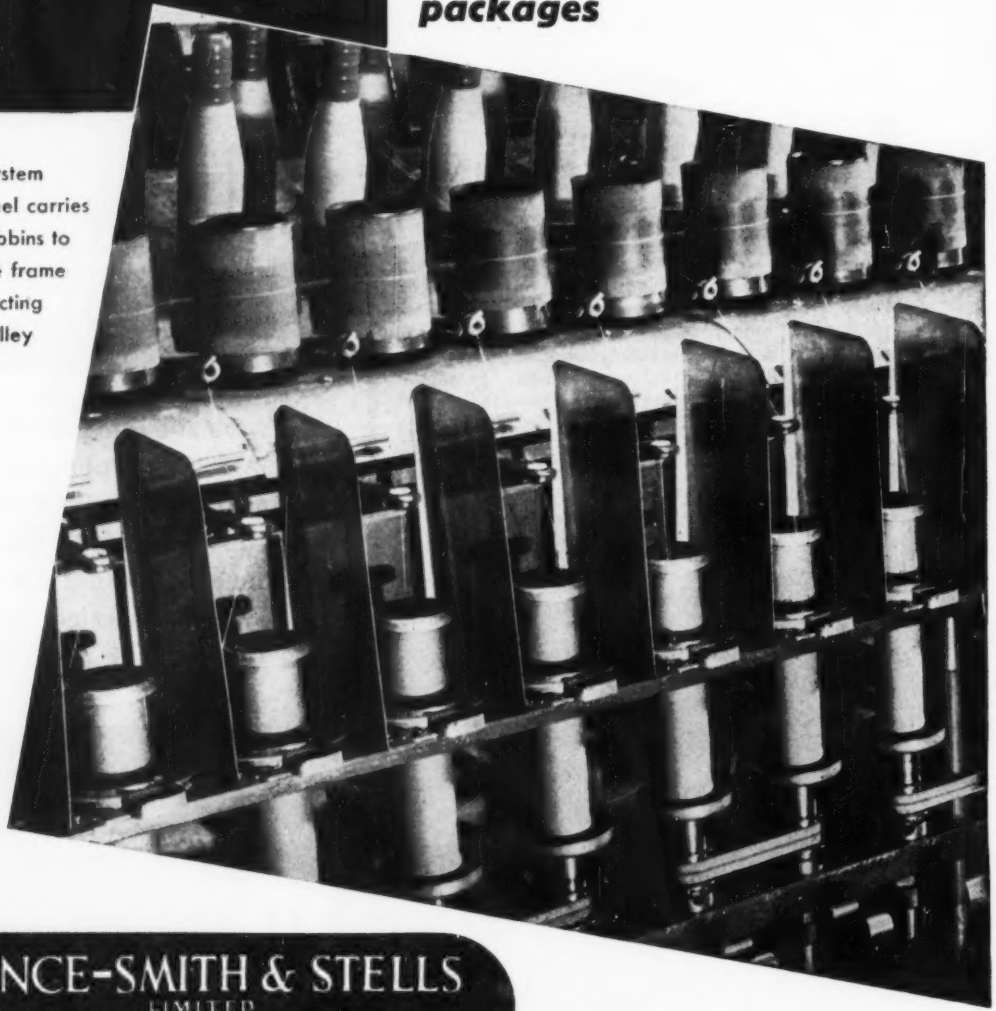
211 CONGRESS STREET
BOSTON 6, MASS.
1639 W. MOREHEAD STREET
CHARLOTTE 2, N. C.

Twist Large Packages of



Prince-Smith & Stells improves 2-fold ring twister for all counts of worsted yarns on large packages

A conveyor system above the creel carries the empty bobbins to the end of the frame without obstructing the working alley with trucks.



PRINCE-SMITH & STELLS
LIMITED
INCORPORATING TAYLOR WORDSWORTH & CO. LTD.
KEIGHLEY ENGLAND

U.S.A. Agents for French System Machinery: Blake Electric Mfg. Co., 43 Commercial Wharf, Boston 10, Mass.

For more information, write direct or use Reader Service post card.

All Counts

IF YOU do two-fold twisting of worsteds, you will find this a very practical machine. It will give you all the time-saving advantages of large packages, together with full twisting control for even fine counts. Increasing the size of the dolly rolls to a 3″ diameter gives a more accurate tension control and consequently a better yarn. New type spindles eliminates vibration and increases speeds. They require lubrication at only 2,500 hour intervals thus reducing the hazard of oil in the yarn area. Ball bearing tension pulley assemblies save power and tape wear. An adjustable change speed device permits quick alteration of spindle speeds. Combination creel allows you to run from either bobbins or large cones interchangeably. A simplified, rail lifter motion (each side separate) affords accurate, easy alterations for fine or coarse counts. The entire machine is designed for years and years of low maintenance service. For further information please contact Atkinson, Haserick & Co.

ABSORBS VIBRATION

The new Hoffman roller bearing spindle insert has a spring and sleeve which absorbs vibration between the rail and the bolster. The free running spindle uses less power and reduces tape slippage. The knee brake mechanism lifts the complete spindle unit from its normal position causing the top flange of the wharle to make contact with a stationary brake shoe.

WE ARE INDEBTED TO THE CLEVELAND WORSTED MILLS CO. FOR THE PHOTOS

NOTICE

TO OWNERS OF

ATKINSON, HASERICK & CO.

MACHINERY

You can secure revised recommendations for aprons, bobbins, card clothing, fallers, rings, screws, etc. for all machinery you have purchased from Atkinson, Haserick & Co. May we suggest that Purchasing Agents review specifications of their mill supplies with one of our engineers. These engineers are continually working with your type of machinery. Their recommendations for even slight changes in parts or usage can often produce gratifying results.

Atkinson, Haserick & Co.

Textile Machinery Agents and Engineers Since 1823

a.h.

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"nothing does as much for a girl as a Jantzen".....

Modern Machinery In

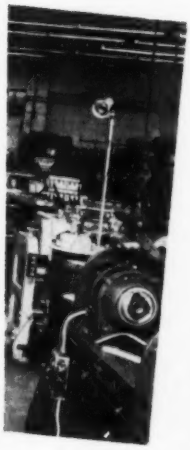
GILL REDUCING: New system of Drawing showing two sets or seven units of Gill Reducers. This is proving to be a very efficient method for reducing costs, improving quality and production. The elimination of creels has improved visibility.

ONLY HOLDSWORTH BUILDS *ALL* THE GILLING MACHINERY FOR THE ABBREVIATED SYSTEM OF WORSTEDS YARN PRODUCTION. CALL ON US.

. . nothing does as much to improve yarn production as GILL REDUCERS*. . .

We are indebted to Jantzen for permission to reproduce the article below from their house-organ **Jantzen Yarns** relative to their new HOLDSWORTH GILL REDUCER INSTALLATION.

ıproves Quality, Safety, Flexibility



As an evidence of continued progress Jantzen is now producing yarn on two units of modern Gill Reducing machines, replacing the former Bradford Drawing equipment. This new process has many advantages besides being more versatile in its potential capacities in the development of new yarns. It will successfully handle fibres varying in staple length from long wools to blends wherein the short fiber may be only 1½ inches long, such as cashmere. Not only do the new Gill Reducing machines make at least 50% less waste but the quality of production is much improved. Less electric power is consumed.

The simplicity of operation makes it easier to teach new operators and the machines, besides being safer, are more efficient and produce less waste, because there is less fly waste, longer ends without breaks and the stock is kept cleaner in the fiber containers.

The old process required a larger and stronger operator to lift and place 3 lb. bobbins on the overhead creel. With the new method it is neatly folded into a tall can holding 21 pounds and is easily slid from one machine to another in this larger but more easily handled package.

Yes, quality, cost and safety are important factors toward continued progress of our fast growing swim suit and sweater business.

ENGINEERING & SERVICE FOR ALL YARN PRODUCTION SYSTEMS. AN UNEQUALED SERVICE

HS

HOLDSWORTH
GILL SCREW CO., INC.
55 Sabin St., Pawtucket, R. I.

a. h.

Atkinson, Haserick & Co.
TEXTILE MACHINERY AGENTS & ENGINEERS SINCE 1823
211 Congress St., Boston 6, Mass.
1639 W. Morehead St., Charlotte 2, N. C.

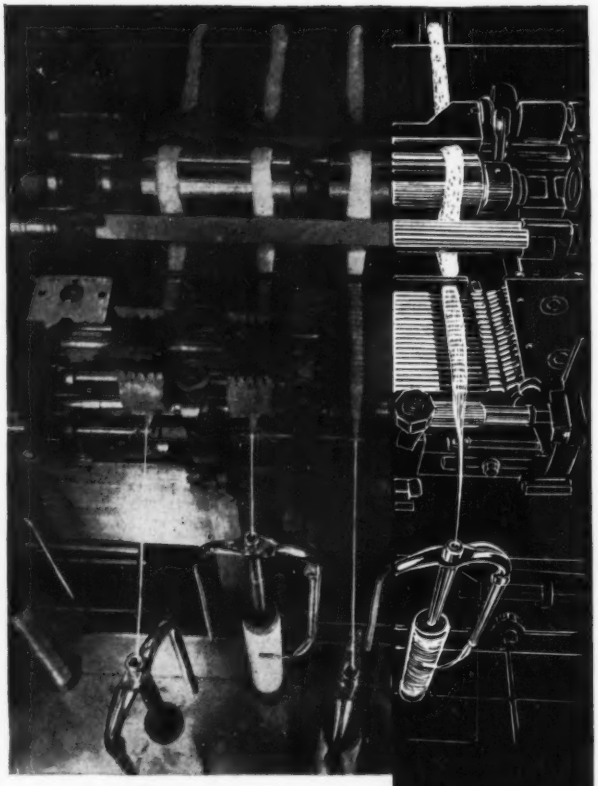
For more information, write direct or use Reader Service post card.

THE new SACM Cone Gill Reducer extends the even end advantages of the Abbreviated System to the reducing operation, when producing a twisted slubbing from an untwisted slubbing.

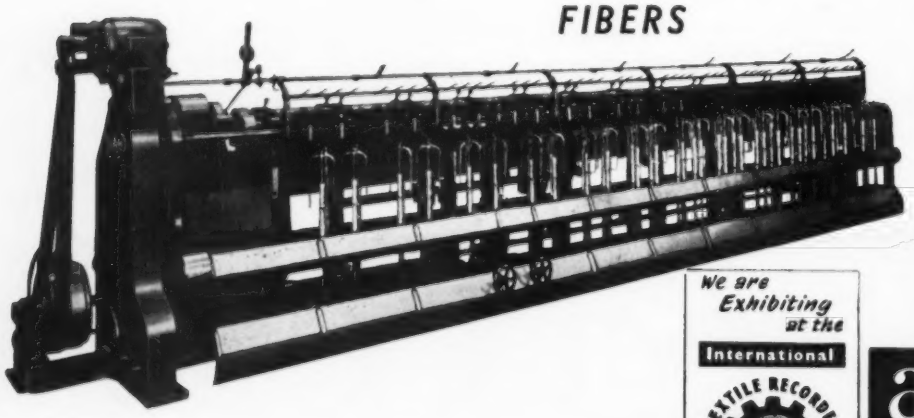
The drafting field consists of a bed of 30 fallers each with four pinned setovers. Each head of fallers feeds four spindles and has an independent screw drive. The faller pin control exercises the necessary restraint on the individual fibers to insure a steady flow of material to the front roller with regular distribution of the short fibers throughout the mass. There is an automatic stop-motion for each head. The maximum number of heads that can be accommodated is twenty, feeding eighty spindles.

Drafts of 5 to 15 and doublings of from 1 to 3 may be obtained, with spindle speeds of up to 950 r.p.m. Bobbin size is 11″ x 6″ or 10″ x 5″. Maximum front roller speed is 1180″ per minute.

This machine is available with vertical creels for bobbins or with a can creel. All gears are precision, machine-cut. The spindle-bobbin drive is practically noiseless and runs in self-lubricated reservoir foot-steps. The top rolls and cone shaft run on ball bearings. The back rolls and back sliver guides are adjustable.



NEW Cone Gill Reducer FOR WORSTED AND SYNTHETIC FIBERS



SACM

U. S. A. — WRITE
ATKINSON, HASERICK & CO.

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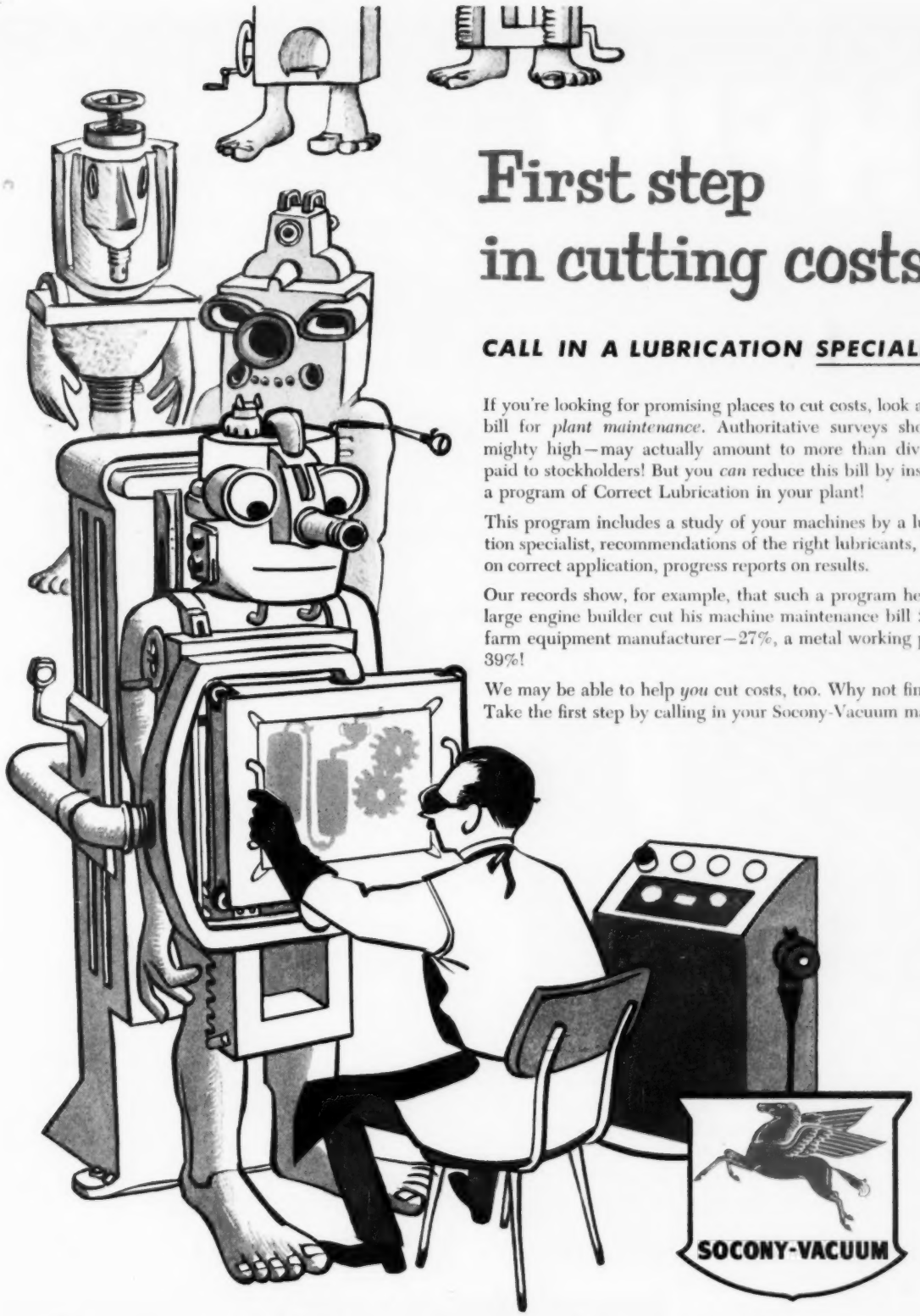
BOSTON 6
CHARLOTTE 2

We are Exhibiting at the International Textile Recorder Machinery Exhibition 1953 Belle Vue, Manchester October 14-24

SOCIETE ALSACIENNE DE CONSTRUCTIONS MECANIQUES

MULHOUSE, FRANCE

For more information, write direct or use Reader Service post card.



First step in cutting costs...

CALL IN A LUBRICATION SPECIALIST!

If you're looking for promising places to cut costs, look at your bill for *plant maintenance*. Authoritative surveys show it's mighty high—may actually amount to more than dividends paid to stockholders! But you *can* reduce this bill by installing a program of Correct Lubrication in your plant!

This program includes a study of your machines by a lubrication specialist, recommendations of the right lubricants, advice on correct application, progress reports on results.

Our records show, for example, that such a program helped a large engine builder cut his machine maintenance bill 24%, a farm equipment manufacturer—27%, a metal working plant—39%!

We may be able to help *you* cut costs, too. Why not find out? Take the first step by calling in your Socony-Vacuum man!

SOCONY-VACUUM

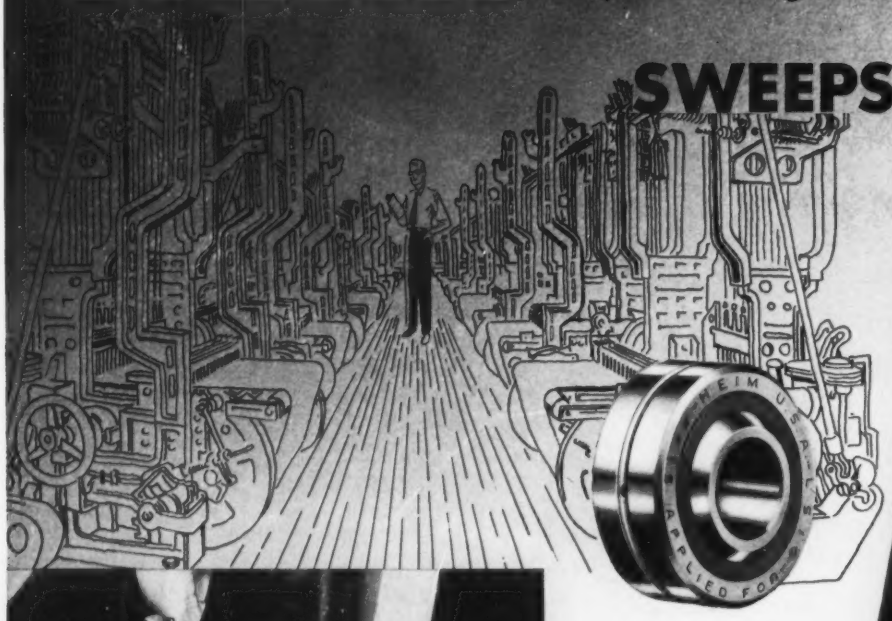
Socony-Vacuum *Correct Lubrication*

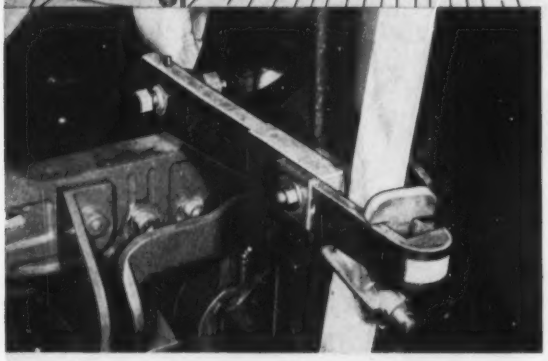
SOCONY-VACUUM OIL COMPANY, INC., and Affiliates: MAGNOLIA PETROLEUM COMPANY, GENERAL PETROLEUM CORPORATION

For more information, write direct or use Reader Service post card.

HEIM *Unibal*

SWEEPSTICK





The Heim Unibal Spherical Bearing, which is pressed into a rubber-bonded fabric sweepstick, is the real reason why the Heim Sweepstick delivers such smooth, trouble-free pick action. There is just no possibility for the stud hole to enlarge and cause trouble. The bearing is self-aligning and long wearing.
Put the Heim Sweepstick to work on your looms now and get set for longer, trouble-free operation with no "down time" due to sweepstick failure.

Write for bulletin and prices.

THE HEIM COMPANY
FAIRFIELD, CONNECTICUT

For more information, write direct or use Reader Service post card.

you can't sit this one out...

Pleats that won't sit out when they're sat *on* are a boon that women have learned to look for—and are willing to pay for! And they're just one of many pace-setting advantages you can build into the fabrics you create by using Du Pont's "modern-living" fibers.

Other such exciting textile advances as thick and thin and crimpable yarns . . . and fibers that offer *built-in* shape retention, wrinkle resistance, and easy care . . . stem from Du Pont research for today's world. For today's customers *want* home furnishings and apparel that look better, wear longer, and require less care.

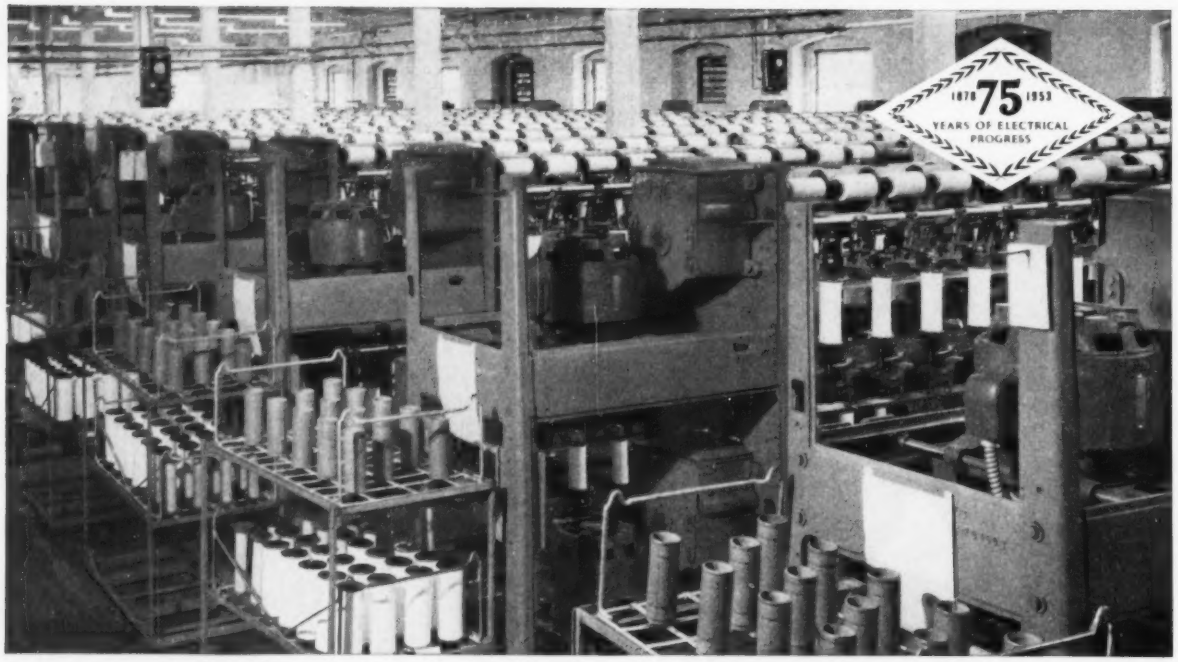
Use Du Pont modern-living fibers for the extras that spell a fabric success. Count on Du Pont's experience in fiber research to help you keep pace with the more demanding needs of today's customers.

Du Pont's Modern-Living Fibers

DU PONT
REG. U.S. PAT. OFF.

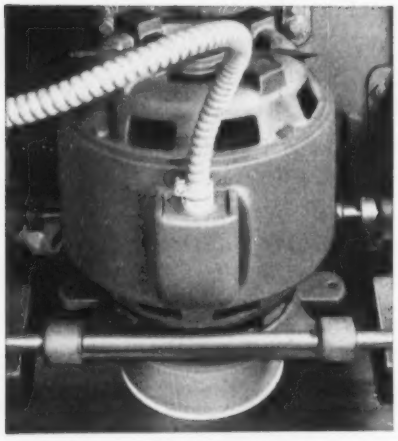
NYLON | RAYON | ACETATE | ORLON® ACRYLIC FIBER | DACRON® POLYESTER FIBER

BETTER THINGS FOR BETTER LIVING . . . *THROUGH CHEMISTRY*



MORE HORSEPOWER, SMALLER FRAMES make G-E vertical twister motors ideal for double-deck installations. Motors (shown with compartment covers removed) fit easily between decks, are easily relubricated.

G-E vertical twister motors pack high hp in small space



SHAFT-UP OR SHAFT-DOWN, these G-E motors deliver plenty of power for high spindle speeds needed on today's twisters.

Compact motors specially designed for double-deck twisters

Here's the answer to your need for twister motors with higher horsepower in smaller frame sizes—a compact, easily relubricated General Electric vertical motor specially designed to fit in limited space. Over-all motor length is shortened by keeping end shield depth to a minimum, with an effective cooling system in these round-frame motors.

Pressure relief lubrication system permits easy relubrication when needed without dismantling motor. Rigid cast-iron construction is highly adaptable to vertical face mounting. Formex* wire windings are impregnated with synthetic-resin varnish and coated with extra-tough Glyptal* red for greater dependability. These tough G-E motors are available in ratings to fit all leading makes of double-deck twisters.

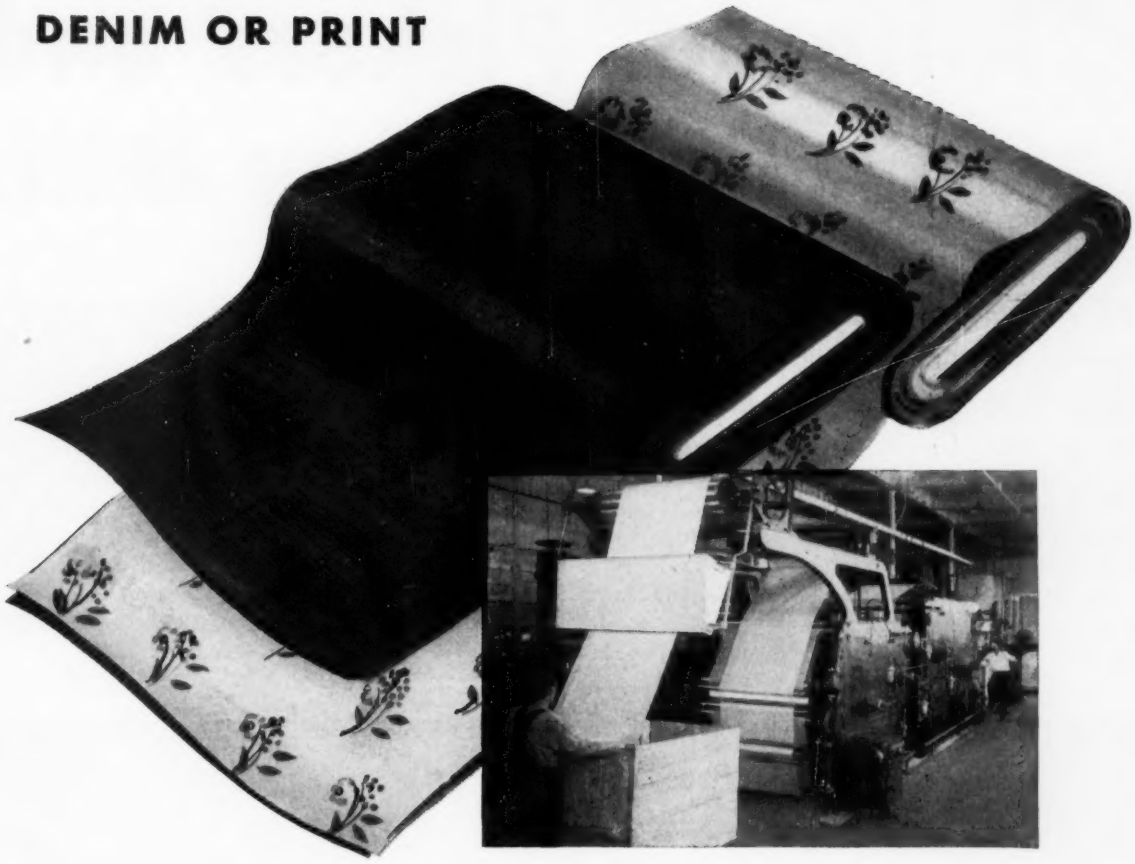
Specify General Electric on your twister for the compact, reliable motor needed to keep twisting and throwing on a continuous basis. For more information contact your nearest G-E Apparatus Sales Office. General Electric Company, Schenectady 5, N. Y. 654-31

*Reg. Trade-mark of General Electric Company

You can put your confidence in—

GENERAL ELECTRIC

DENIM OR PRINT



NOPCO'S *New* finishes provide *Complete* control of widely varying hand in *Sanforized** cottons

No *single* finish can cover the full range of textures from the soft silkiness of fine percales to the stiff, leathery hand of denim. *NOW* Nopco *does* offer a complete line of synthetic finishes that include all the basic characteristics a practical finisher needs.

By careful selection of one or more of these compounds, you can get more exact control of desired hand, and at the same time allow for maximum variation in the Sanforized* fabrics.

This is the first full line of chemically synthesized finishes ever offered which can be selected and combined like building blocks to "construct" the most suitable finish.

These synthetic finishes also prevent sticking at the boot, and eliminate yellowing during processing and the development of unpleasant odors in storage.

FUNDAMENTAL CHARACTERISTICS OF NOPCO* FINISHES FOR CONTROLLING HAND OF STABILIZED FABRICS

	Nopcowet* 86-A	Nopco 2272-R	Nopco 1271-M	Nopco 1935-S	Nopco 1935-M	Nopcowet* 68-S
Wetting	X	X		X	X	X
Lubrication		X		X	X	
Softness			X	X	X	

*NOPCO—Reg. U.S. Pat. Off. *NOPCOWET—Trade Mark of Nopco Chemical Company *SANFORIZED—Registered Trade Mark of Cluett, Peabody & Co.

NOPCO
Chemical Company, Harrison, N. J.

NOPCO EVOLVED THRU RESEARCH

Branches: Boston · Chicago · Cedartown, Ga. · Richmond, Calif.

"Tailored" Pickers and Help Many Mills

By Varying the Density at Vital Points, the Dayton Thorobred Drop Box Picker Safely Absorbs All Strains and Stresses of Impact

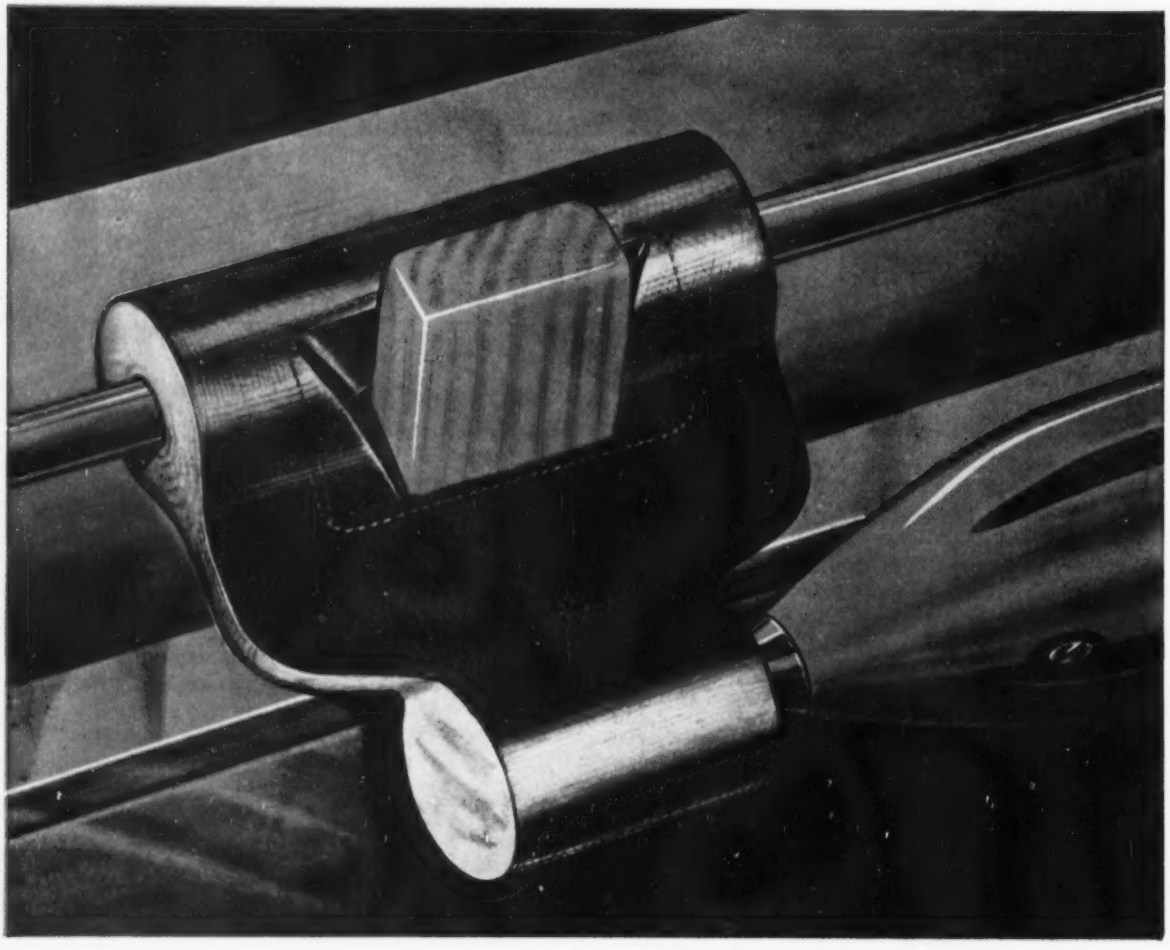
There's a good reason why Dayton Thorobred Drop Box Pickers perform so satisfactorily on today's high speed looms—they are "tailor-made."

For instance, at the shuttle contact point, the exact density or softness easily absorbs the shocks of shuttle receiving. It also eliminates shuttle point loosening and helps assure a perfect throw throughout life of picker.

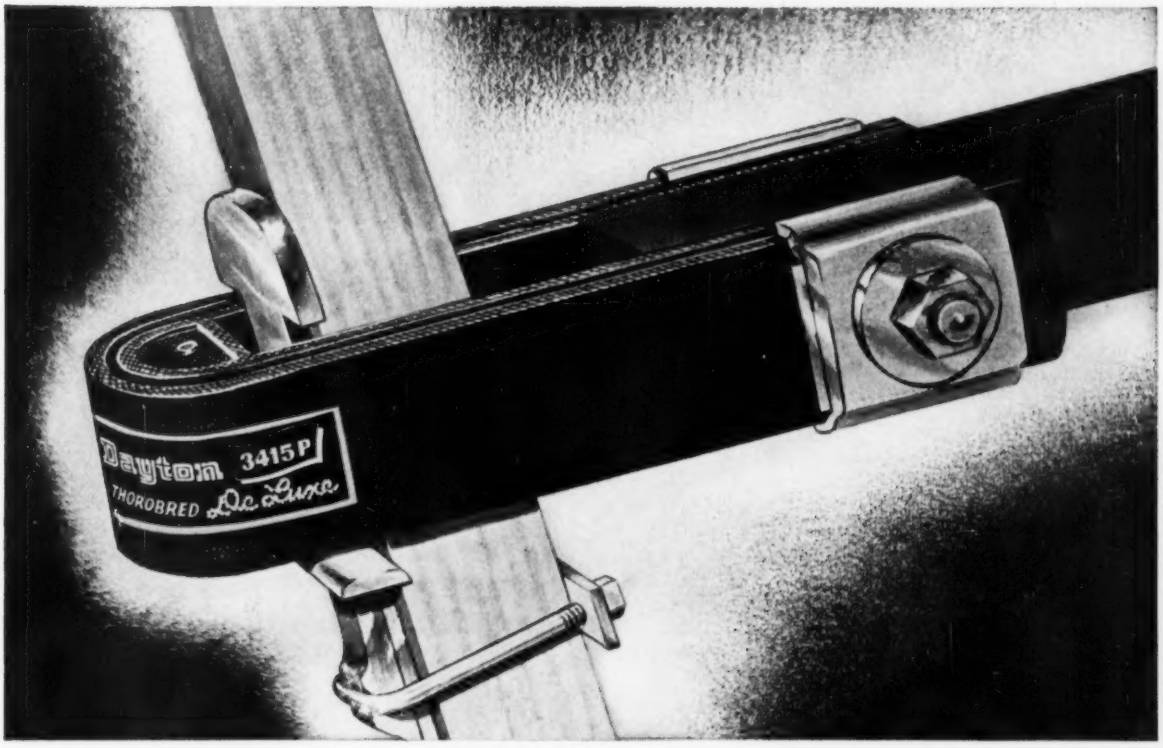
Then, *at the picker stick contact point,* just the right amount of cushion has been provided to absorb the terrific impacts. This results in less wear on the stick and longer life for the picker.

And, at the spindle hole, to minimize wear a hard composition bearing surface is built into the picker. This requires no lubrication and will not wear egg shaped.

This density control at these vital points is molded into a one-piece picker. The result is more efficient loom operation and lower picker costs. Ask your loom supply jobber for further information on Dayton Drop Box Pickers, or write Dayton Rubber direct.



Lug Straps Reduce Weaving Costs



Extra Strength Built Into Dayton Thorobred Lug Straps Assures Long, Trouble-Free Service at Low Cost

Mills that equip their looms with Dayton Thorobred Lug Straps enjoy low replacement costs. There are several reasons for this.

In the first place, Daytons are built all in one piece—no rivets or parts to work loose. Another thing, Daytons have exactly the right amount of cushion built right into the lug. This cushion means not only the ability to "give" under impact, but also the ability to "come back" immediately. This saves wear and tear on the loom, and enables the strap to give longer service.

Another important advantage of Dayton Lug Straps is their extra strength. This is obtained chiefly from a special longitudinal cord, right in the center of the lug, which provides the desired extra strength along the line of force.

As a result of their sound engineering design, Dayton Thorobred Lug Straps are leaders in their field for efficient service at the lowest possible over-all cost. Ask your loom supply jobber for further details, or better still, try some now on your own looms. You'll soon be convinced.

©D. R. 1953

Dayton Rubber

Since 1905

TEXTILE PRODUCTS FOR BETTER SPINNING AND WEAVING

Dayton Rubber Co., Textile Division, Woodside Bldg., Greenville, S. C.

'Round the World 1113 times for $1.00

Calculations based on performance records of Victor 4/0 F1.1 X3D Travelers show that one dollar's worth ran about 27,840,000 miles — 1113 times the distance around the equator.

When you see performance like that, it's easy to think that traveler costs are too small to be worth bothering about. But such records are achieved only when you choose the right traveler for the job, and get the best that money can buy.

Selecting travelers carelessly, without proper regard for quality, will quickly cut down the "mileage". Also, excessive ends down, plus frequent traveler changes, can boost your traveler-pound cost in yarn production far out of line.

When you choose Victor Travelers, a Victor Service Engineer will help you make sure to get the traveler best suited to your individual spinning or twisting. You also get extra long traveler-life, because Victor Travelers take top honors in any test for quality and uniformity.

Remember, traveler costs per pound of yarn depend, *never* on price, *always* on performance. Plan now to talk to a Victor man, whether you are running conventional fibers, synthetics, or blends. Write, wire or phone the nearest Victor office . . . for prompt service.

•

Keep a Step ahead with

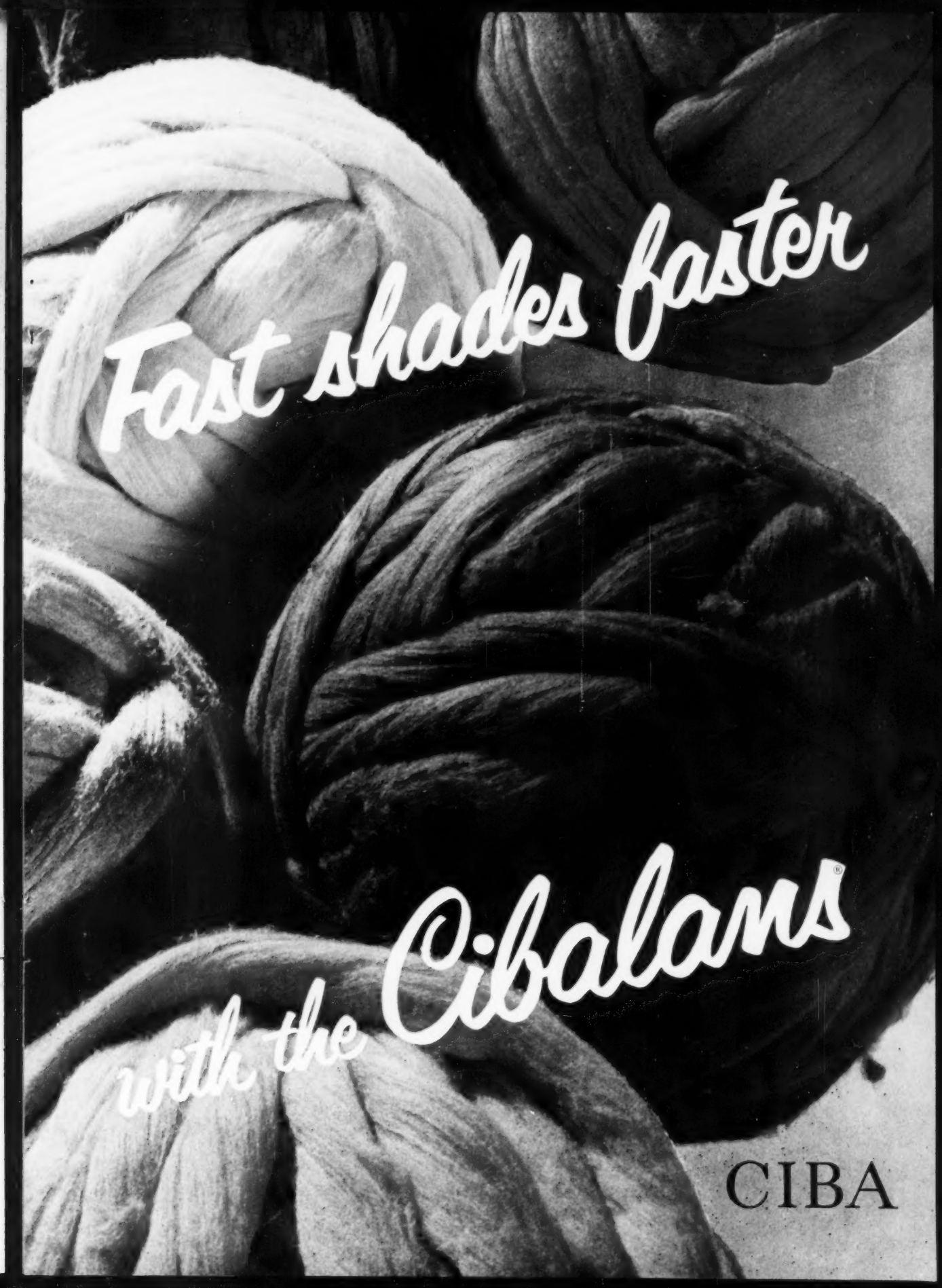
VICTOR Ring Travelers

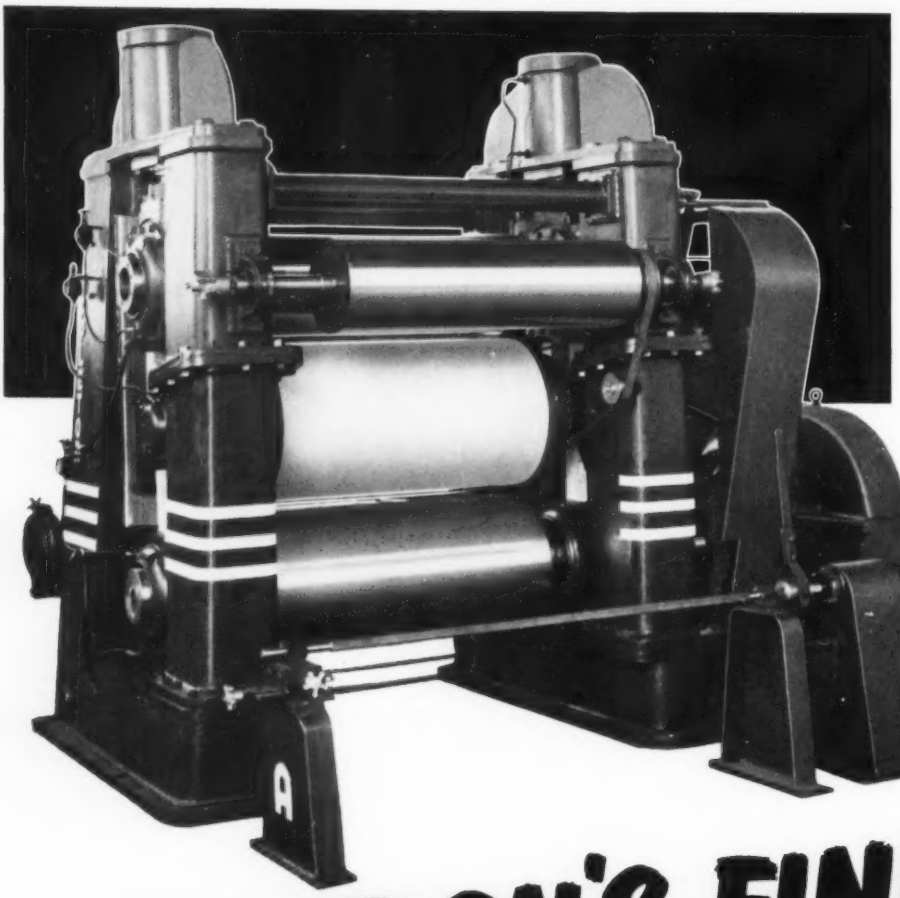
VICTOR RING TRAVELER COMPANY

PROVIDENCE, R. I. . . . . 20 Mathewson St. . . . . Tel. Dexter 1-0737

GASTONIA, N. C. . . . . 358-364 West Main Ave. . . . . Tel. 5-0891

For more information, write direct or use Reader Service post card.


Fast shades faster
with the Cibalans®
CIBA



FRICTION'S FINE...

in proper application!

Shown above is *Appleton Machine Company's* 50-ton Three Roll Friction Calender. Vickers Hydraulic Pressure System with dual controls. Gas-heated roll, water cooled cylinder. Especially adapted for Everglaze finishes. All rolls are in anti-friction bearings, with force-fed oil lubrication.

APPLETON MACHINE COMPANY
APPLETON WISCONSIN

CUSTOM-BUILDERS OF PULP & PAPER MACHINES · WINDERS · FINISHING ROLLS · REWINDERS

EACH A SPECIALIST IN HIS OWN FIELD : INGOLSTADT SPINNING MACHINERY FOR COTTON-WORSTED-CUT RAYON. * * * * * * * * * * * * * MAK CARD SETS, SELF-ACTING MULES, RING SPINNING FRAMES. * * Schlafhorst MACHINES FOR WINDING, WARPING AND SECTIONAL WARPING. * Sucker SIZING MACHINES, SIZE MIXING AND COOKING INSTALLATIONS. * B. Thies DYEING-AND BLEACHING PLANTS FOR YARNS AND CARD-SLIVERS OF ALL KIND. * * * * * * Astra WEAVING MACHINES FOR COTTON-, WOOL- AND SPECIAL FABRICS e.g. FELT-CLOTHS, JACQUARD-WEAVING MACHINES. * * * * * JOH. KLEINEWEFERS SOHNE CALENDERS, MANGLES, PRINTING-, MERCERIZING-MACHINES, CONTINUOUS BLEACHING AND DYEING PLANTS. * * * * * * * * MONFORTS FINISHING MACHINERY, MAKING-UP MACHINERY FOR ALL KINDS OF CLOTH. * * * * * * * * * *

UNIONMATEX TEXTILMASCHINEN-UNION G.M.B.H. FRANKFURT-MAIN

FRIEDRICH-EBERT-STRASSE 22 · TEL.: 93522 · CABLE: UNIONMATEX · TELEPRINTER: 04 16 48

From stock scouring to soaping off use **ENERGETIC** for detergent economy and efficiency

A powerful, concentrated non-ionic detergent, ENERGETIC is outstanding for use in kierboiling, jig scouring and dyeing, package scouring and soaping off, dye leveling, soaping off napthols, wool skein scouring, raw wool stock scouring, and other scouring operations. Because ENERGETIC comes to you 90% active, you seldom need more than ⅓ of the conventional anionic material requirements.

ENERGETIC combines high soil-removing action with excellent soil-suspending ability. It is a quick penetrating, low-sudsing product that prevents redeposition of soil on the goods, cutting down on time and labor. And costs can be further reduced by adding builders to ENERGETIC, if desired.

ENERGETIC is essentially neutral in character, stable in both acid and alkaline solutions. It is completely compatible with anionic or cationic finishing agents, soaps and oils. Other desirable features are the almost complete absence of salts and ENERGETIC'S controlled suds characteristics. Write Armour's Industrial Soap Department for further information on ENERGETIC—the proven textile detergent. It is available in 55-gallon steel drums and 5-gallon containers.

ARMOUR *Industrial Soap Department*

Armour and Company • 1355 West 31st Street • Chicago 9, Illinois

For more information, write direct or use Reader Service post card.

SPINNING MACHINERY
FOR COTTON, STAPLE FIBRE AND WORSTED
Design and supply of complete spinning plants
based on latest experience in spinning and engineering
Spares for spinning machinery

We are manufacturing for cotton spinning mills in particular:

Blowing Room Machinery (Trutzschler system)
with central full-automatic electric control
Revolving Flat Cards · Drawing Frames · Speed Frames
Ring Spinning Frames · Ring Doubling Frames

and for wool combing mills and worsted spinning mills:

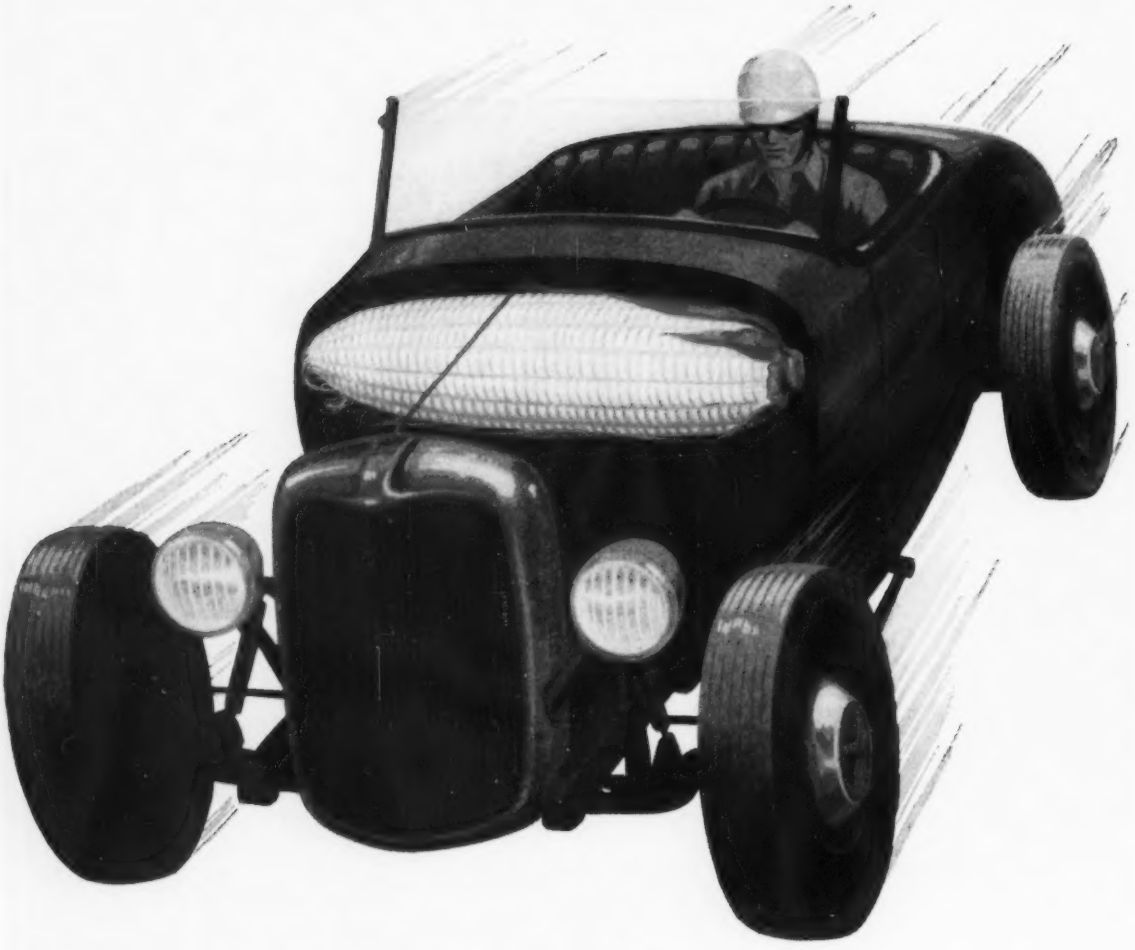
Combers · Gills Intersecting · Open Gills
Porcupine Drawing Boxes · Ring Spinning Frames
Fly Spinning Frames · Ring Doubling Frames
All Machinery for French system

DEUTSCHER SPINNEREIMASCHINENBAU INGOLSTADT

Ingolstadt Oberbayern

INGOLSTADT

what's **corn** doing hitting "70" down the pike?



CORN PERFORMS VITAL FUNCTIONS... IN MANY UNEXPECTED PLACES

Under the hood of your car for instance...derivatives of corn were used in casting the cylinder heads... also in extracting (from its oxide, alumina) the aluminum used in the pistons and other essential parts. This is but one of the numerous examples of how continuous basic research in corn helps American industry... helps you.

CORN PRODUCTS IN TEXTILES

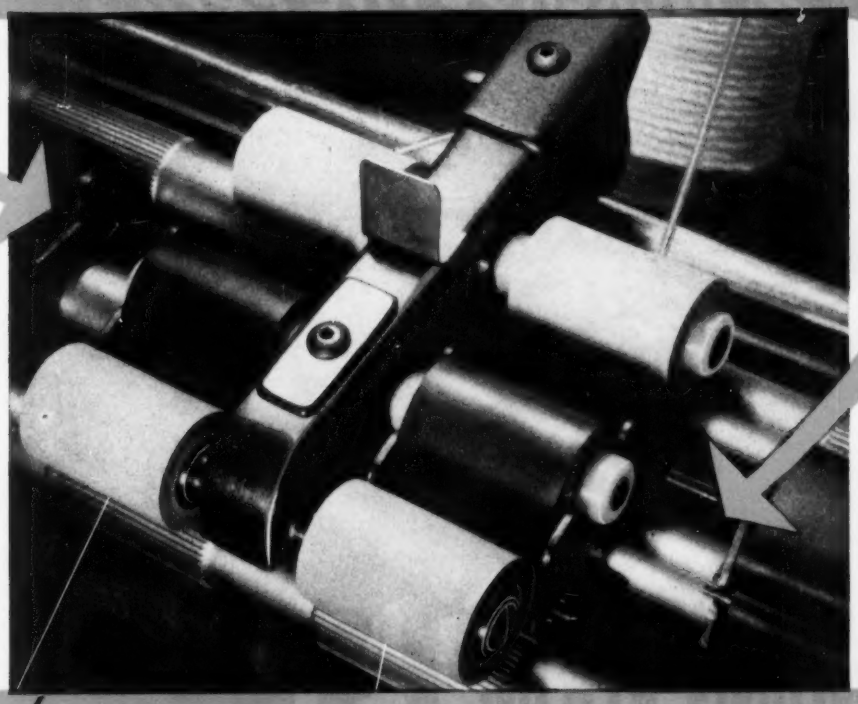
For the textile industry Corn Products Refining Company supplies a variety of specialized starches, gums and dextrins... recommended ingredients for many textile processes.

We offer quality in volume supply unexcelled in the field. Complete technical service is available without cost or obligation. If you have a production problem why not check with Corn Products. We welcome your specific technical inquiries.

Manufacturers of
GLOBE®
brand dextrins, gums
GLOBE®
brand starch
EAGLE®
brand corn starch

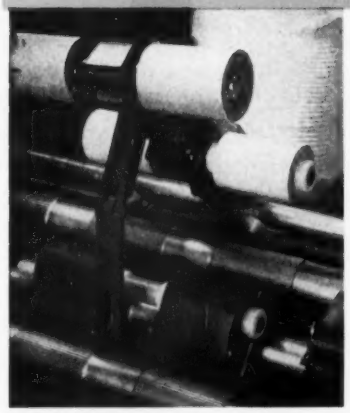
CORN PRODUCTS REFINING COMPANY, 17 Battery Place, New York 4, N. Y.

That's Right—NO CAP BARS!



Brand New CleanAlign Saddle

PATENTS PENDING



Rolls swing up for cleaning

eliminates ⅔ of the area to be cleaned, because there are NO cap bars

CLEANALIGN maintains rolls in perfect parallel alignment at all times.

Illustrated in use with CLEANDRAFT Non-lubricating Top Rolls in back and middle lines and CLIMAX Ball-bearing Top Rolls on front line—

CLEANALIGN Saddle forms a completely non-lubricated arrangement: eliminating oiling expense; giving oil-free yarn; reducing picking cost by 75% to 90%.

The CLEANALIGN Saddle permits wide variety of weight distribution, easily changed.

Piecing-up from side possible.

The CLEANALIGN Saddle is applicable to practically any cotton spinning system.

FOR FURTHER INFORMATION ADDRESS

PRODUCT SALES, INC. 21 VERNON STREET WHITMAN, MASS.

Ala., Ga., La., Miss. & Tenn.	South Carolina	Va. & N. C.	Ark., Tex., Okla.	For European Service:
J. H. Canady 3344 LeBron Ave. Montgomery, Ala.	Dudley Dunlap Product Sales, Inc., P. O. Box 1863 Room 502 Montgomery Bldg. Spartanburg, S. C.	Raymond L. McCauley 3020 Manor Rd. Charlotte, N. C.	Texas Roller Covering Works 1407 North 17th St. Waco, Texas	Victor Beecroft 54 Boroughgate Otley, Yorkshire, England

FOREIGN REPRESENTATIVES IN THE PRINCIPAL TEXTILE CENTERS OF THE WORLD

HOW TO INCREASE THE PRODUCTION...

In Your WINDING ROOM

Have you changed to large packages in your spinning room, or are you planning to? If so, consider the possibility of increasing production in your winding room without placing an undue burden on the operators. Here's how it's done.

Suppose you have a 100 spindle Foster Model 102 (50 spindles to a side). Just add a section of 20 spindles (10 spindles to a side) and one girl can tend 60 spindles on one side, supplied by large bobbins, just as easily as she can tend 50 spindles on one side, supplied by small bobbins. Thus you increase your output without imposing on the operator and the investment is considerably less than if you installed separate new winders.

We have used the Foster Model 102 as an example, but the same principle applies to the Foster Model 75 or any other Foster winder.

Of course there is a maximum number of spindles per machine in each case, which varies with the traverse of the package.

If you wish to increase production in your winding room, consult with us to find out if it's practicable.

FOSTER MACHINE COMPANY • Westfield, Mass., U.S.A.

Southern office — Johnston Bldg., Charlotte, N. C. Canadian Representative — Ross Whitehead and Company Limited, 1475 Mountain St., Montreal, Quebec • European Representative — Muschamp Taylor Limited, Ashton-Under-Lyne, England.

For more information, write direct or use Reader Service post card.

THE ORDER CALLED FOR:

Nylon reserve in a nylon-viscose cross-dye

The dyehouse delivered a perfect job, thanks to Sandoz' Technical Service

The Problem:

To reserve an acceptable shade of white in the nylon portions of the nylon-viscose checked fabric, while dyeing the viscose. The best of the so-called "Nylon-White" colors for viscose, as well as many of the usual products for reserving wool, silk and nylon, had failed to produce the desired effect.

Sandoz suggested:

Use .25% Resolin B paste in the bath along with the dyestuff and Glaubers salts for 1 hour at 200° F. An excellent white nylon was secured. Resolin B paste, an alkanapthalenesulphonic derivative, has the additional faculty of not damaging the light fastness of direct colors.

Out of this difficult problem it was also found that Sandoz Cuprofix Rubine FBL makes it easier for the dyer to produce deeper wine shades, as it is one of the best colors for dyeing viscose while reserving nylon.

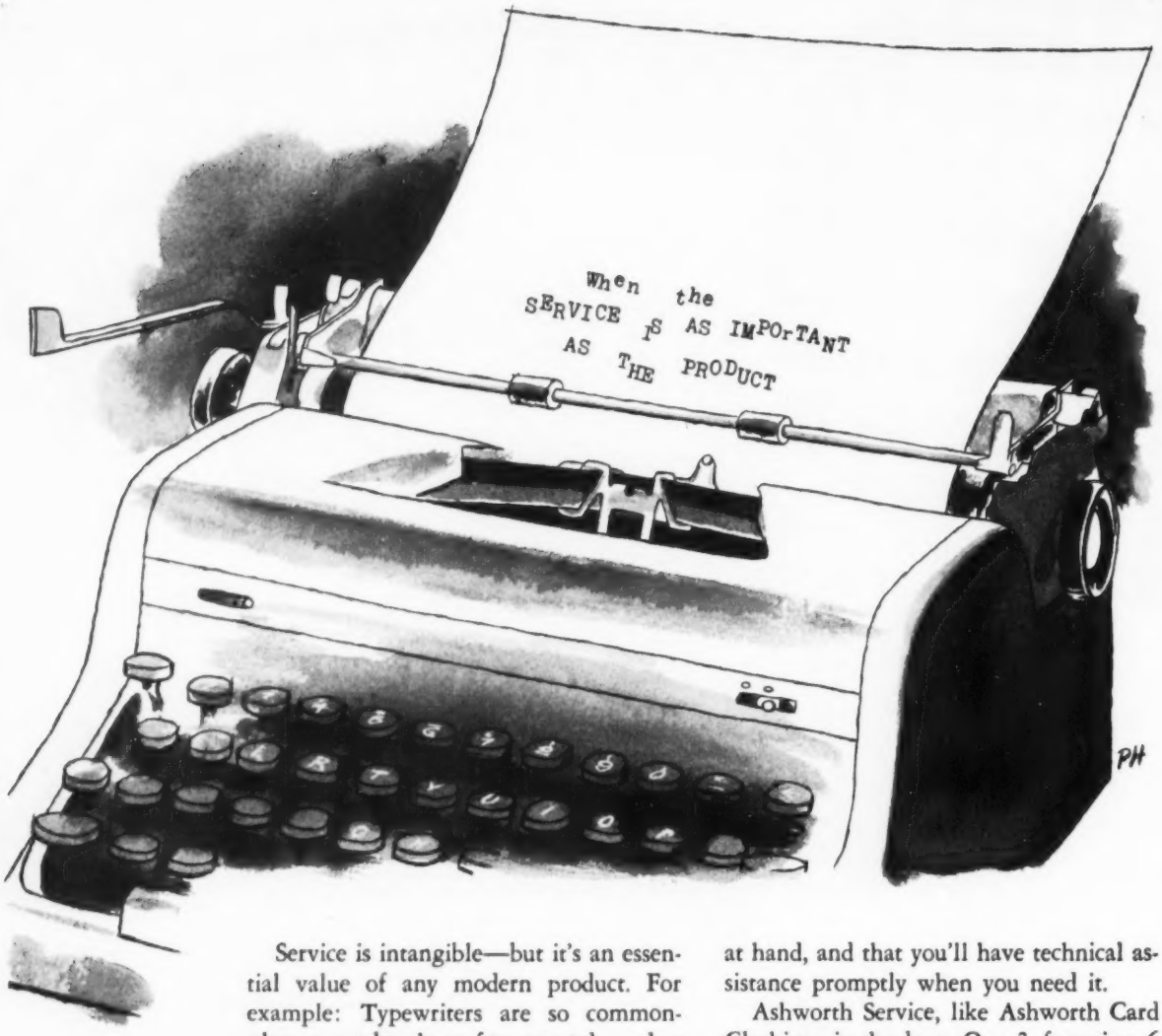
• • •

Whenever you have a problem involving the treatment or dyeing of the new synthetics or blends, call on Sandoz' Technical Service. Our technical experts may be able to help you find a practical solution. There are Sandoz branches in Hudson, Mass.; Fairlawn, N. J.; Philadelphia; Charlotte; Cincinnati; Los Angeles; Montreal and Toronto. Sandoz Chemical Works, Inc., 61 Van Dam Street, New York 13, N. Y. 3.3

SANDOZ

SANDOZ

THINKS AHEAD WITH TEXTILES



Service is intangible—but it's an essential value of any modern product. For example: Typewriters are so commonplace we take them for granted — but imagine what profane attention they would attract, if routine service didn't keep them operating properly!

As for card clothing, quality is a "must". But service is equally essential — to ensure the product is available quickly and conveniently, that you get the best type of card clothing for your purpose, that efficient installation service is near at hand, and that you'll have technical assistance promptly when you need it.

Ashworth Service, like Ashworth Card Clothing, is the best. Our 3 factories, 6 repair shops and 7 distributing points — all strategically located in major textile areas—assure you of adequate supply, quick deliveries, convenient repair service.

Our practical card men are always on call — ready to give you technical service, survey your cards and recommend necessary repairs. Write to our nearest plant for full details of Ashworth Service.

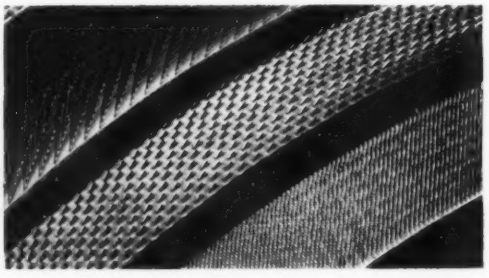
ASHWORTH BROS., INC.

American Card Clothing Co. (Woolen Division)

Fall River*†‡ Worcester‡ Philadelphia*†‡ Atlanta†‡
Greenville*†‡ Charlotte†‡ Dallas†‡ (Textile Supply Co.)
Factory* Repair Shop† Distributing Point‡

Ashworth **CARD CLOTHING**

3 FACTORIES **6** REPAIR SHOPS **7** DISTRIBUTING POINTS



STIFF NYLON
SHOE CLOTH

CRUSH RESISTANCE

there's a specific **PRYM** thermosetting **RESINS** to solve your problem

PERMANENT
SCHREINERING

EMBOSSING

GLAZING

STABLE TO STORAGE
without refrigeration
regardless of temperature changes!

—with greater economy—new durability!

This new series of thermosetting resins cuts costs and improves fabric performance, widens the scope of converters and finishers. Prym finishes are liquid, completely soluble in water, easy to apply with standard procedures. For technical data, samples, or consultation, write, wire or phone Warwick.

• PRYM A • PRYM S • PRYM CR • PRYM N • PRYM DS provide extremely durable stabilization, crease resistance, stabilization, mechanical finishes on a wide variety of fabrics. Wide variety of hand. PRYM A and PRYM CR provide chlorine resistance—no yellowing of whites! Write for details.

WARWICK CHEMICAL COMPANY, DIVISION

CHEMICAL CORPORATION

10th STREET AND 44th AVENUE, LONG ISLAND CITY, NEW YORK

For more information, write direct or use Reader Service post card.

only

ECLIPSE BOBBIN HOLDERS

OFFER THESE

"BIG TEN" Features

1. Completely replaces wooden skewers.
2. Stainless steel ball bearings minimize friction, resulting in uniform quality of roving.
3. Permits less twist. Tests indicate yarn of more even texture.
4. Creel boards easily cleaned. Overhead suspension leaves open creels. Blowers more effective.
5. Better spinning of spun rayon.
6. Easier creeling; less physical effort and fewer motions required.
7. Improved brake attachment prevents over-run and backlash.
8. Now cadmium plated and stainless steel balls more rust resistant.
9. Time-tested product—holders in operation for over ten years.
10. Easy to install; practically no upkeep.

★ ★ ★

Textile men everywhere are concerned with efficiency and economy of operation, and that's just what these *exclusive* Eclipse features assure you! If you want to modernize your present plant equipment profitably, you can't go wrong with the finest—Eclipse Bobbin Holders. Write us for further details.

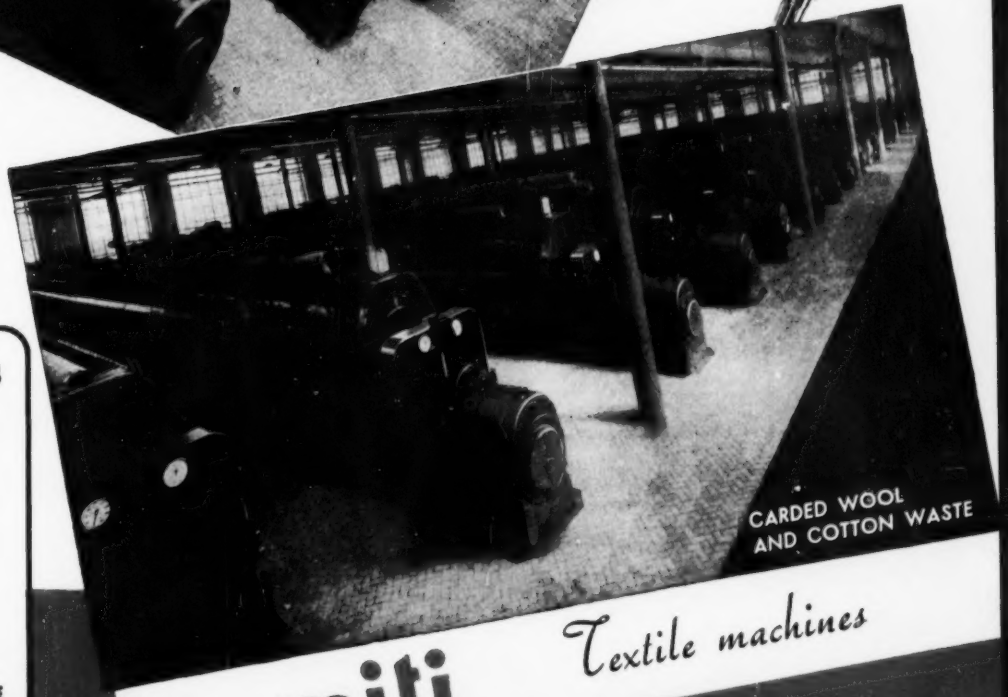
ECLIPSE MACHINE DIVISION of
ELMIRA, NEW YORK
Bendix AVIATION CORPORATION
ECLIPSE
Export Sales: Bendix International Division, 72 Fifth Avenue, New York 11, N. Y.

30 years experience

COTTON

COMBED WOOL

roller
bearing
spindles
novibra
spheric

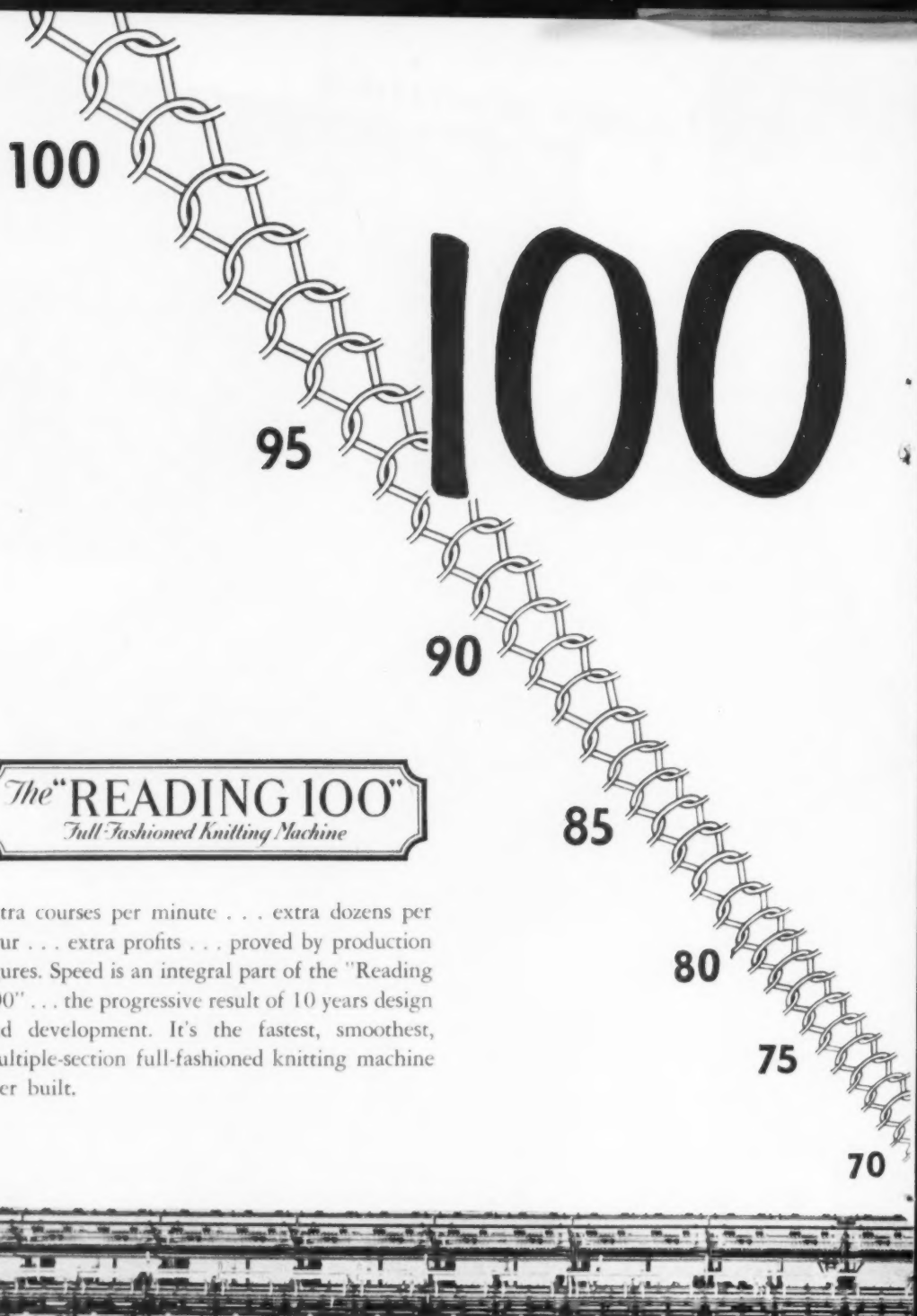


CARDED WOOL
AND COTTON WASTE

MACHINES
for
PREPARING,
SPINNING and
TWISTING of
COTTON,
COMBED WOOL,
CARDED WOOL and
COTTON WASTE

Carniti *Textile machines*

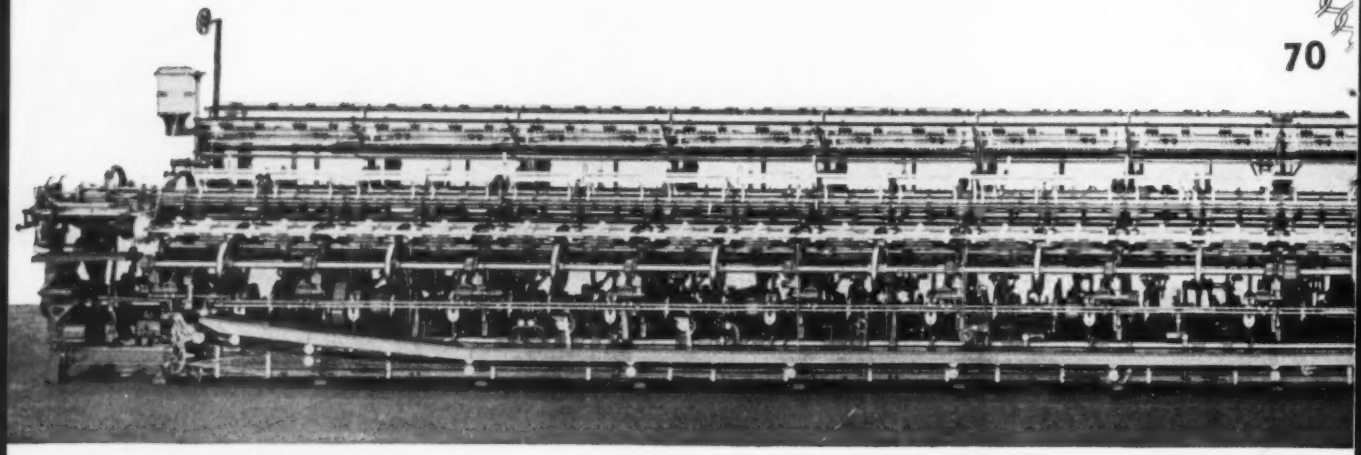
A. Carniti & C. - Officine Fonderie Meccaniche Tessili Oggionesi S. p. A. - Oggiono (Como) Italia



The "READING 100"

Full-Fashioned Knitting Machine

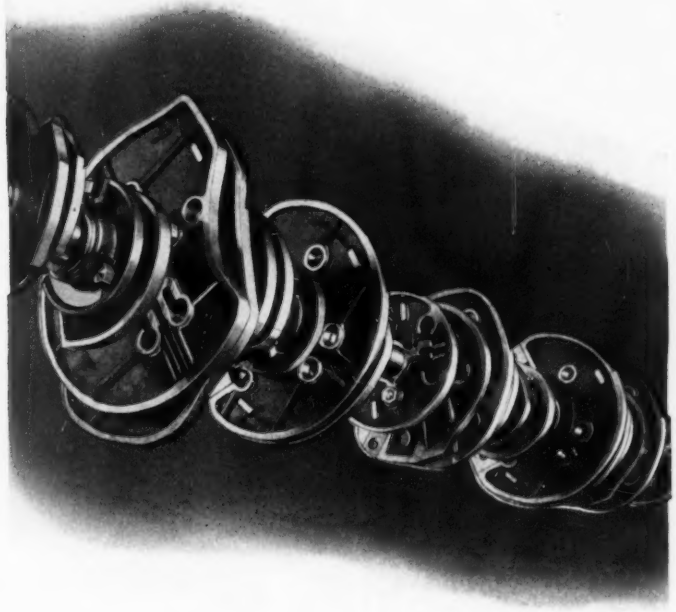
Extra courses per minute . . . extra dozens per hour . . . extra profits . . . proved by production figures. Speed is an integral part of the "Reading 100" . . . the progressive result of 10 years design and development. It's the fastest, smoothest, multiple-section full-fashioned knitting machine ever built.



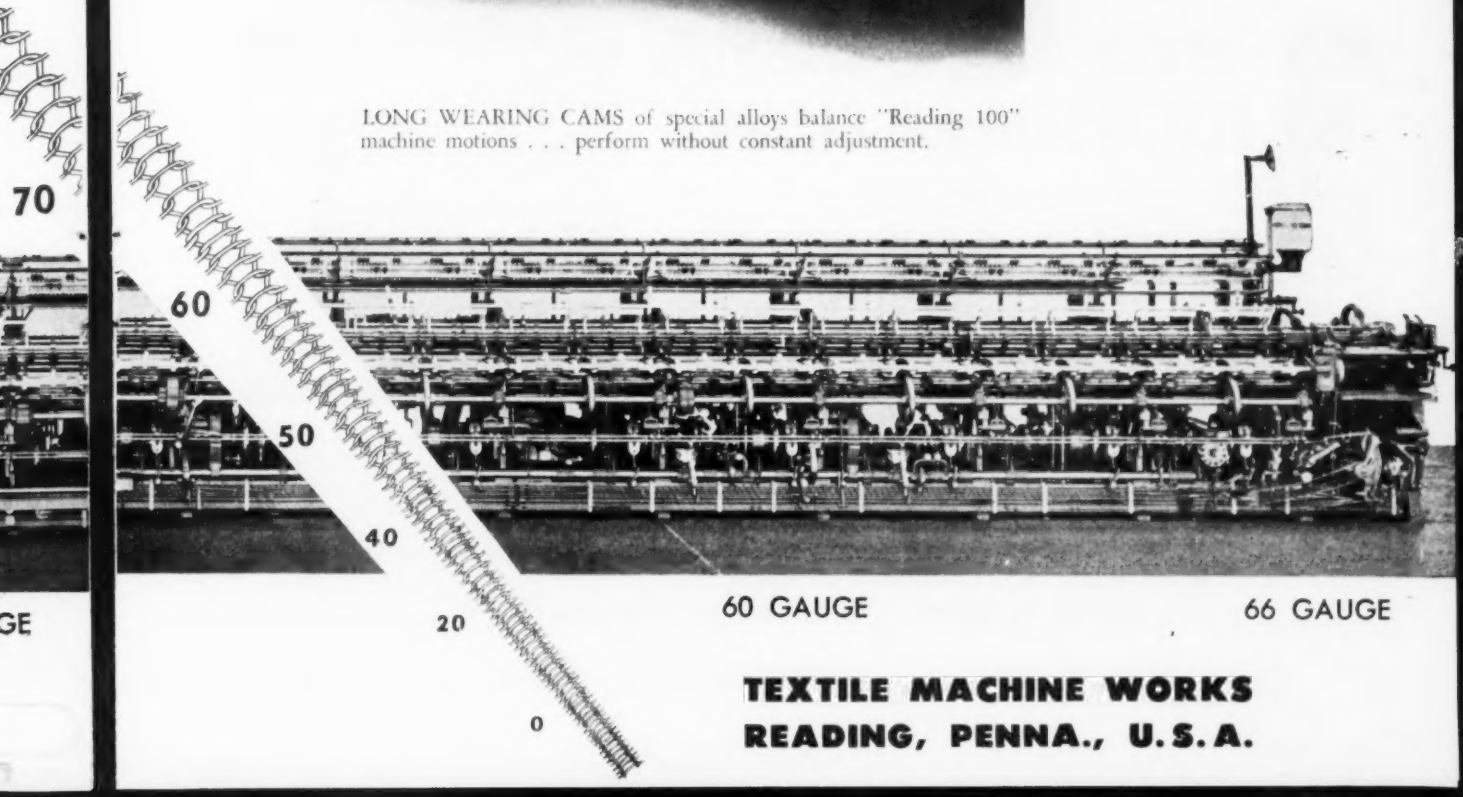
30 SECTIONS

51 GAUGE

courses per minute

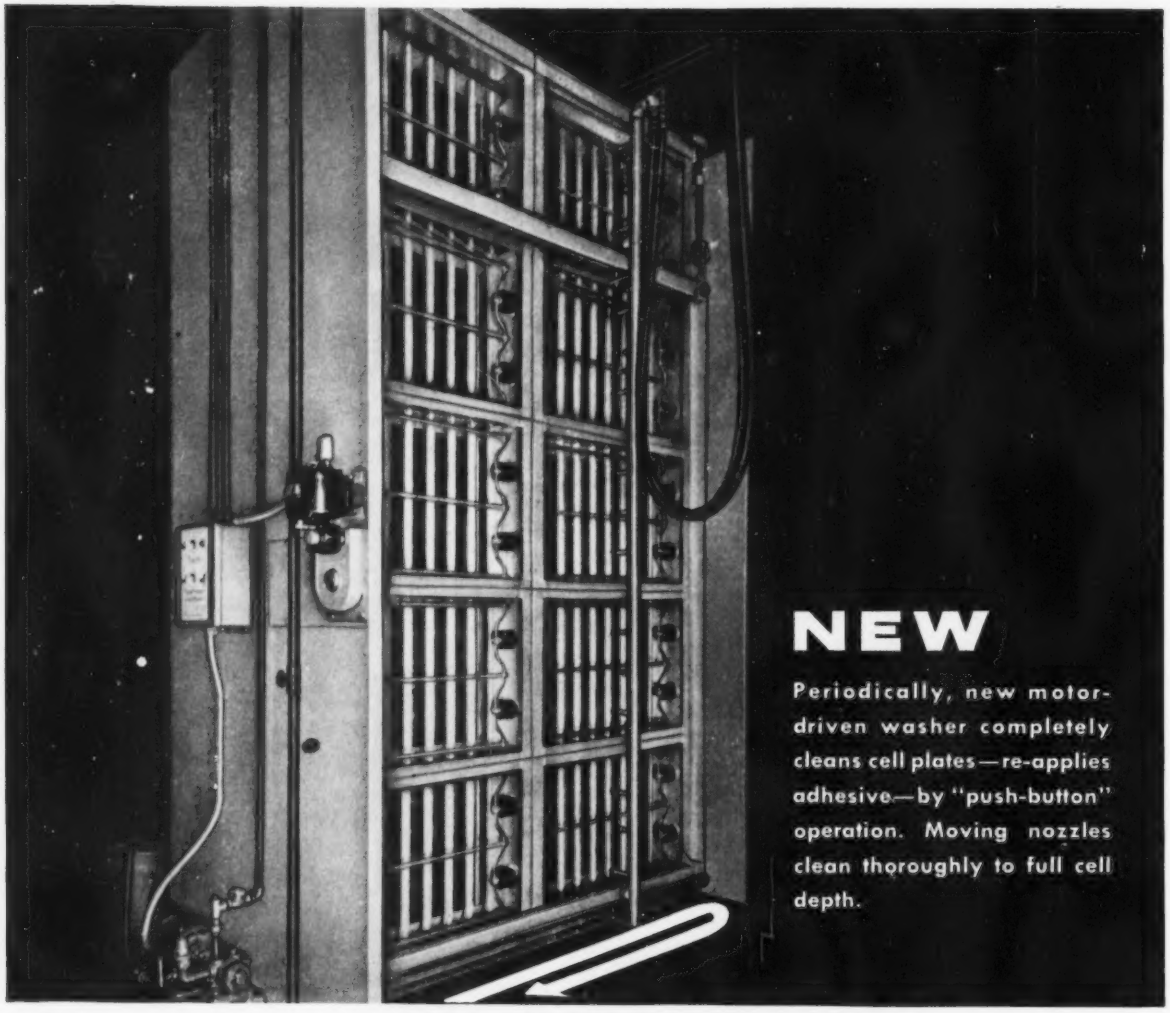


LONG WEARING CAMS of special alloys balance "Reading 100" machine motions . . . perform without constant adjustment.



60 GAUGE 66 GAUGE

TEXTILE MACHINE WORKS
READING, PENNA., U.S.A.



NEW

Periodically, new motor-driven washer completely cleans cell plates—re-applies adhesive—by "push-button" operation. Moving nozzles clean thoroughly to full cell depth.

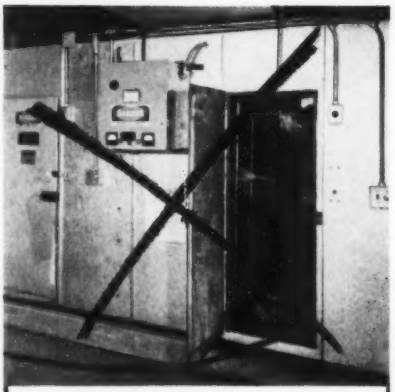
NOW—"PUSH-BUTTON" WASHING FOR ELECTRONIC AIR CLEANER

Now, a new, low-cost, automatic PRECIPITRON® washer cuts maintenance costs and eliminates unpleasant inside-the-duct washing of cells.

This unique device features moving nozzles, making PRECIPITRON the easiest electronic air cleaner to service. After thoroughly cleaning the plates, the washer re-applies adhesive. Entire operation is under "push-button" control. Laboratory and field tests have proved that moving-nozzle washing is a "must" for proper cleaning.

Type PX PRECIPITRON, the electronic air cleaner, traps microscopic airborne particles of dirt, dust, grime and pollen which would pass through conventional filters. It fits into any heating, ventilating or air conditioning ductwork.

Learn how PRECIPITRON will keep the air in your building dirt-free at negligible cost. Call your local Westinghouse-Sturtevant office, or write: Westinghouse Electric Corporation, Sturtevant Division, Hyde Park, Boston 36, Massachusetts.



Maintenance men no longer need to enter enclosure to clean PRECIPITRON. New "push-button" feature does away with hot, wet tasks.

WESTINGHOUSE AIR HANDLING

YOU CAN BE SURE ... IF IT'S Westinghouse

J-80231

HOW YOU CAN GET *LONGER WEAR* from your *V-BELTS*

Service and efficiency of your V-Belt drives depend on how your drives are planned, and on the V-Belt you select for the drive. Consideration of the basic factors involved will help you to select the specific V-Belt that will maintain lowest production and maintenance cost for your operation.

Data Tables Eliminate Guesswork

From tests in our laboratory and field observations of every type of application, we have determined and tabulated V-Belt data for your use in planning and selecting your drive. These tables provide corrected horsepower figures, service factors, arc-of-contact correction factors, driven speeds and other elements to be considered.

Selection of Belts and Sheaves

Belt failures and maintenance costs are reduced by following recommended sheave diameters to provide proper seating of the V-Belts in the grooves. The D-A Manual will help to determine the proper belt dimension for your sheaves.

Prevent Overloads and Belt Slippage

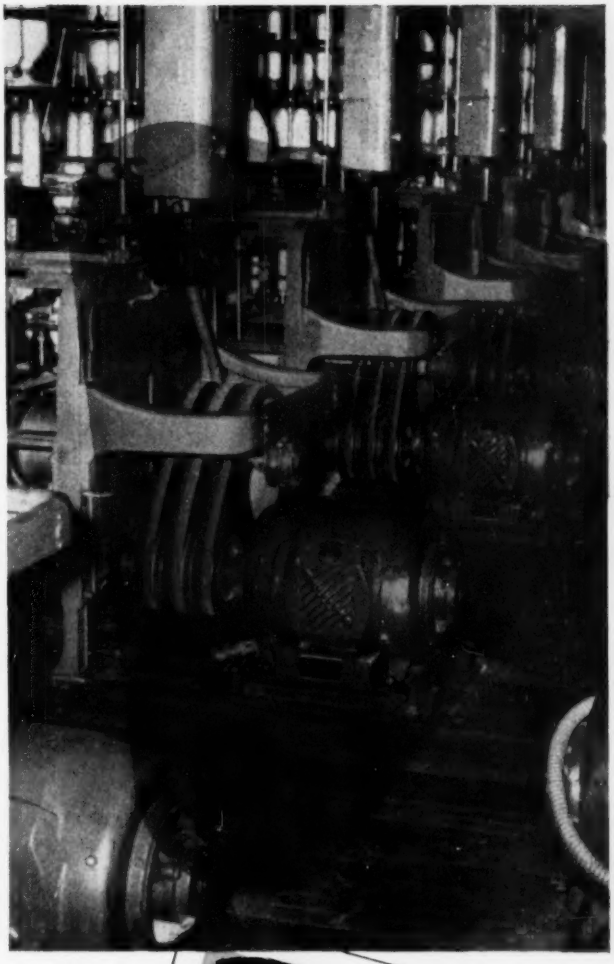
Selection of the number, size, and type of V-Belt according to designated horsepower capacity prevents overloading and production losses. Reduction of the number of belts or sheave diameters below those recommended invites future trouble and increased maintenance costs. The D-A Manual is a reliable guide to follow. Durkee-Atwood V-Belts will last longer on your drives.

D-A Service Includes Engineering Help

Durkee-Atwood Company maintains a complete engineering and research department. If you have a V-Belt or V-Belt drive problem, our facilities and services are available to you upon request.

Complete Warehouse Stocks Conveniently Located:

ATLANTA • CHICAGO • CLEVELAND • DALLAS
JERSEY CITY • MINNEAPOLIS • OAKLAND



Write Dept. TW-8 for D-A 60-page engineering catalog containing new RMA-approved INCREASED HP ratings for Industrial V-belts.

DURKEE ATWOOD V-BELTS

Form No. 556

EXTRA VALUES
For Textile Mill Maintenance

DURKEE-ATWOOD COMPANY
Department TW-8 • Minneapolis, Minnesota

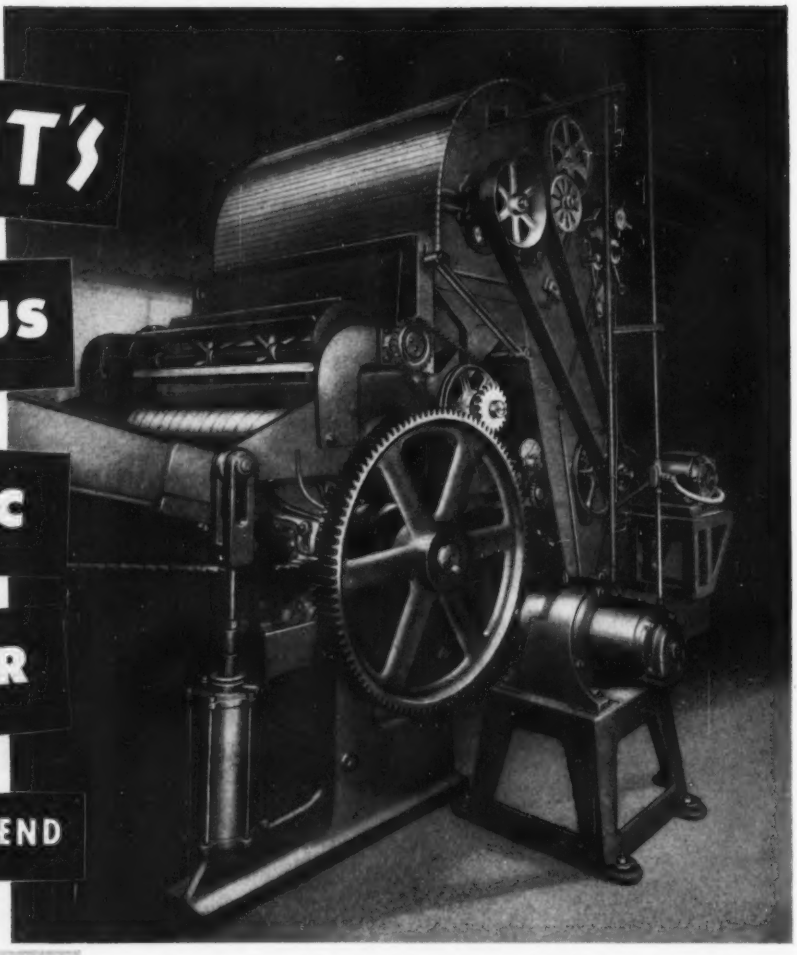
SARGENT'S

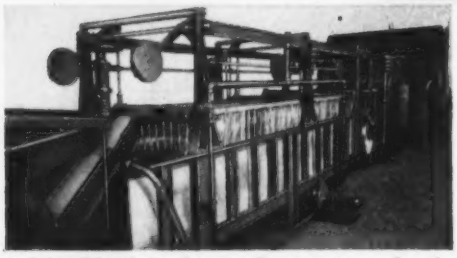
CONTINUOUS

AUTOMATIC

EXTRACTOR

ANY FIBRE—ANY BLEND





SARGENT'S Washer-Extractor-Dryer train — for the utmost in fibre safety, coupled with top quality, speedy, continuous production. Illustrated are SARGENT'S all-stainless steel Washer for scouring, bleaching, acidifying, the Feed and Extractor, and SARGENT'S Single Apron Dryer.

SINCE 1852

May We Send You...
more details about this modern production unit? Write us, and ask for your copy of Extractor Bulletin No. 189

THE MOST MODERN AND EFFICIENT EXTRACTING SYSTEM YET DEVISED FOR REMOVING EXCESS LIQUIDS AND DYES

Unit consists of SARGENT'S continuous, automatic feed and pneumatic squeeze roll machine with ball-bearing rollers and patented tension control feature. Delivers up to 10 tons pressure when needed. Individual vari-speed motor drives. Stainless steel or other anti-corrosive metals throughout. Moisture content of stock reduced to 37% or less, enabling dryer to do better, speedier, more economical work. Even, continuous web of full-length, soft, unbroken fibres facilitates quality production in all later processes.

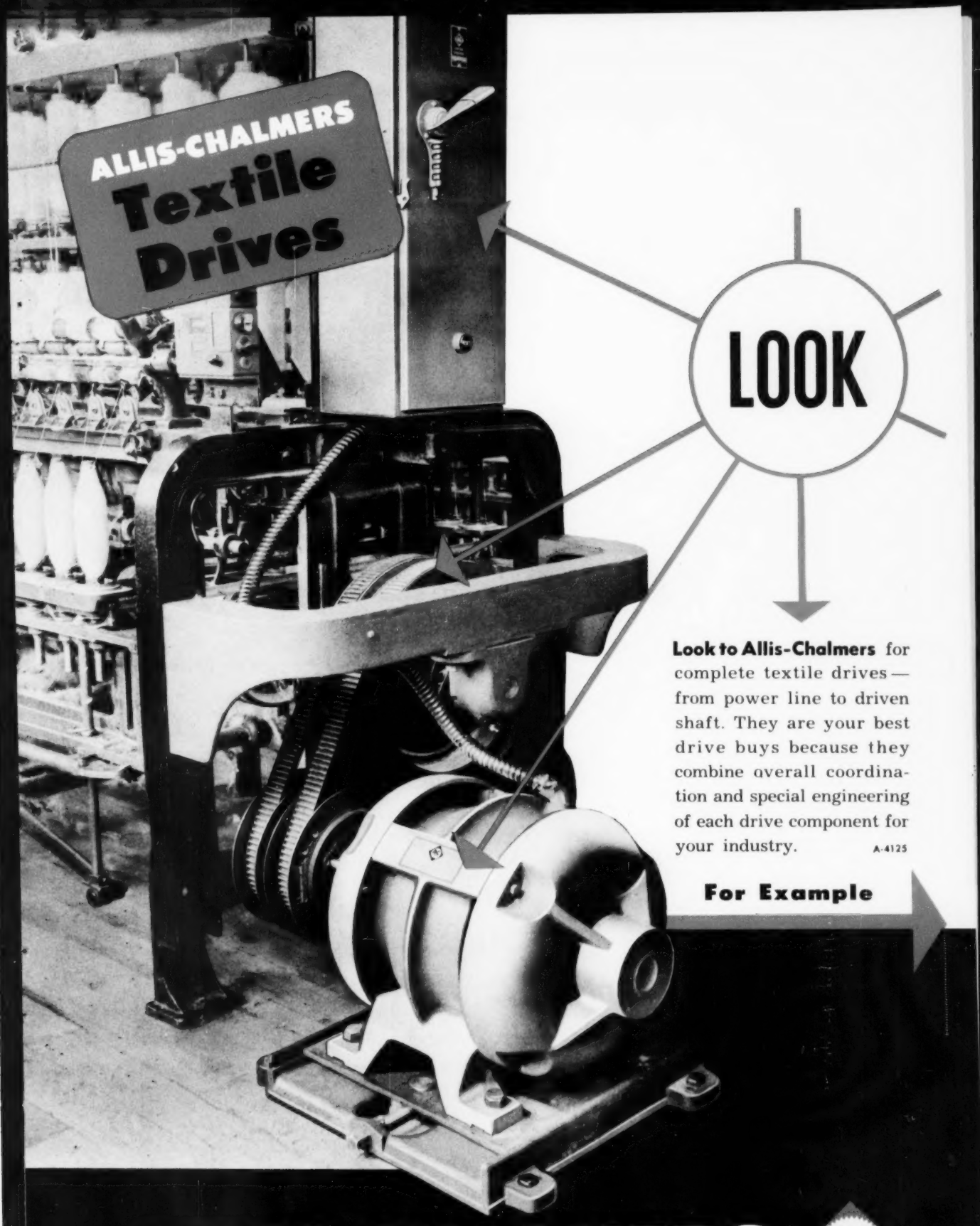
Three sizes — 36" rolls, 50" and 60", or to meet your needs. The 50" unit, illustrated, has in actual production tests delivered 3200 pounds of dyed wool per hour.

C. G. SARGENT'S SONS CORP.

GRANITEVILLE, MASSACHUSETTS, U.S.A.

• • •

REPRESENTATIVES: F. E. WASSON, 519 Murdock Rd., Philadelphia 19, Pa.
A. L. MERRIFIELD, 215 Grove Ave., Cincinnati 15, Ohio
W. S. ANDERSON, Carolina Specialty Co., Charlotte, N. C.
HUGH WILLIAMS & CO., 47 Colborne St., Toronto 1, Canada

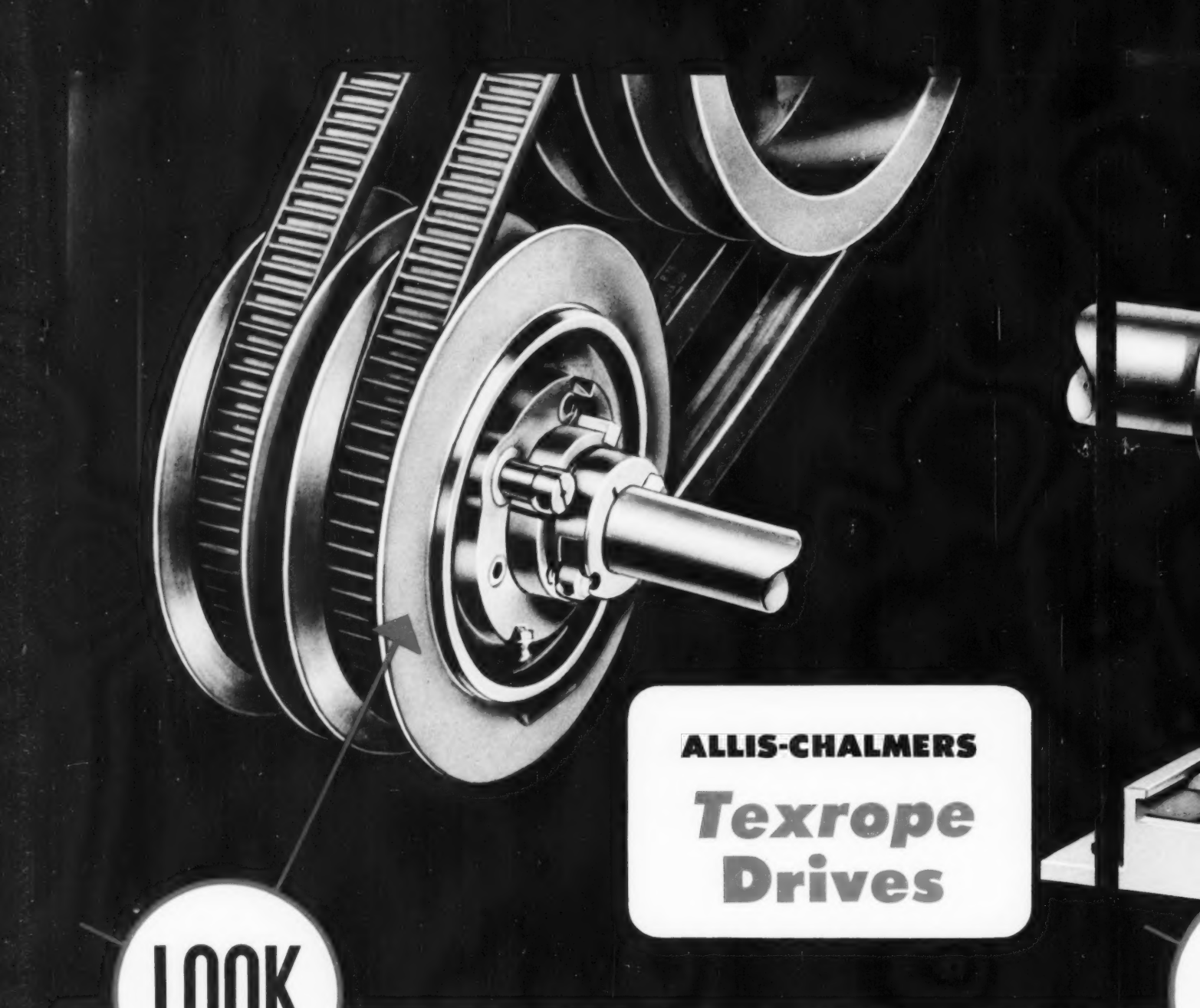


LOOK

Look to Allis-Chalmers for complete textile drives — from power line to driven shaft. They are your best drive buys because they combine overall coordination and special engineering of each drive component for your industry. A-4125

For Example

ALLIS-CHALMERS



ALLIS-CHALMERS

Texrope Drives

LOOK

At Advantages of Wide Range *Vari-Pitch* Sheaves

1 Sheave can be mounted so adjustment is on motor side . . . out in the open . . . instead of in cramped space between sheave and spinning frame.

2 Adjustment is fast and accurate. After unlocking the assembly, you simply turn a single adjusting screw, using a lever rod that slips through a hole in head of screw.

3 Spin many yarn numbers — without changing sheaves. Speed adjustment is stepless over a range of nearly 2 to 1. You get the exact speed needed for yarn number to be spun. Instead of changing sheaves to change yarn numbers, use an Allis-Chalmers textile drive with wide range *Vari-Pitch* sheave.

For details on this sheave and other *Texrope* drive products ask your Allis-Chalmers distributor or district office for bulletin 20S7811. Or write Allis-Chalmers, Milwaukee 1, Wisconsin.

Texrope and *Vari-Pitch* are Allis-Chalmers trademarks.

At Non-Clog Design of *Quick-Clean* Motors

Powerful fans sweep lint-laden air into motor and right out again, through large unobstructed ventilating openings.

All internal air passages are smooth, hard and streamlined so that lint cannot lodge.

Sealed and pre-lubricated double width single row ball bearings are an important feature of the Allis-Chalmers *Quick-Clean* motor. They will operate for long periods without attention of any kind. When motor is dismantled, they may then be cleaned and repacked. Inside face of bearing is protected from lint by a collar pressed onto motor shaft.

Quick-Clean motors are built with special acceleration and torque characteristics to meet requirements of roving frames, cards and other machines. A totally-enclosed non-ventilated loom motor is also available.

Ask your Allis-Chalmers distributor or district office for details. Allis-Chalmers, Milwaukee 1, Wisconsin.

Quick-Clean is an Allis-Chalmers trademark.

LOOK

ALLIS-CHALMERS "Certified" SERVICE

At Specialized Service that Backs these Drives

Allis-Chalmers distributors and district offices are equipped to provide the application help you need. In addition, the distributors listed below operate "Certified Service" shops. Here factory-approved methods and parts are used to assure like-new service from your motors, transformers and control.

Allis-Chalmers District Offices and Certified Service Shops in Textile Areas

Allis-Chalmers textile specialists are located in the following cities:

Atlanta, Georgia
Birmingham, Alabama
Boston, Massachusetts
Charlotte, North Carolina
Chattanooga, Tennessee
Dallas, Texas
New Orleans, Louisiana
Providence, Rhode Island
Richmond, Virginia

Certified Service Shops

ALABAMA
Birmingham
Electrical Repair & Service Co.
2411 First Ave., South
Montgomery
Standard Electric Co.
505 N. Decatur St.

CONNECTICUT
Hartford
Charles H. Leppert
100 Walnut Street
Waterbury
Electric Motor Repair Co., Inc.
2101 S. Main Street

GEORGIA
Albany
Georgia Electric Co.
927 Roosevelt Ave.
Atlanta
Bearden-Thompson Electric Co.
1085 Bankhead Ave., N.W.

NEW HAMPSHIRE
Concord
A. S. Tracy
28 Green Street

NORTH CAROLINA
Charlotte
Southern Electric Service
Co., Inc., 714 W. Trade Street
Greensboro
Southern Electric Service
Co., Inc.
Rocky Mount
Hammond Electric Company
824 S. Church Street
Columbus
Smith-Gray Electric Company
710 Third Ave.

LOUISIANA
New Orleans
Industrial Electric, Inc.
3227 Magazine Street
Shreveport
Shreveport Armature &
Electric Works, 800 Spring St

MAINE
Brewer
Stanley J. Leen Company
54 Wilson Street

MASSACHUSETTS
Lawrence
Roland B. Glines Co.
265 Lowell Street
Springfield
Electric Motor Repair Co.
11 Park Street

SOUTH CAROLINA
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Southern Electric Service
Company, Inc.
Spartanburg
Southern Electric Service
Company, Inc.

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Columbia
Middle Tennessee Armature
Works, 113 Andrews St.
LaFollette
Standard Armature Works
LaFollette, Tenn.
Memphis
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TEXAS
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Dallas
Industrial Electric Equipment
Co., 1119 S. Industrial Blvd.
Houston
Roy A. Berentz Co.
1400 Carr St.

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Richmond
Wingfield & Hundley
13 South 17th Street
Roanoke
Virginia Armature Company
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- ☐ Handy Guide to Motor Selection 51B6052
- ☐ *Quick-Clean* Textile Motors 51B6055B
- ☐ Across-the-Line Starters 14B7132
- ☐ Reduced-voltage Starters 14B7215
- ☐ Wide Range Stationary Control Sheaves 20S7811
- ☐ *Vari-Pitch* Drive Engineering Data 20B7499

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QUESTION

How many products can be made from

RANDOM WEBS

ANSWER *Unlimited number . . .*

Your ingenuity is the only determining factor

Random fibers (non-oriented) webs or mats can be processed into hundreds of end products . . . products that are now being made by costlier processes from more expensive materials . . . products that are still in the laboratory. Random webs can be made from practically any waste or staple fibers by themselves or in combination. Fibers as diverse as cotton mill waste, nylon, glass, wool noils, asbestos, wood fiber, jute, rayon waste have been made into webs. Products such as insulations, reinforcements, mats, towelings, filters, drapes, clothing interlinings are already commercially manufactured.

WRITE for New Bulletin No. 102. Inquiries are welcome.

TEXTILE DIVISION

CURLATOR

CORPORATION

EAST ROCHESTER, NEW YORK

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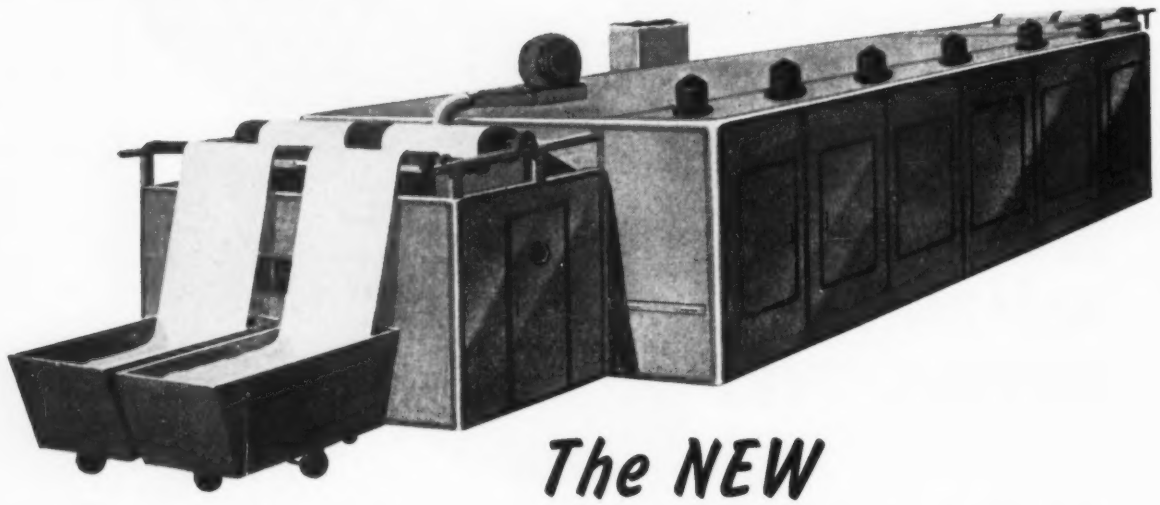
NOTHING EVER BEFORE LIKE IT...



The NEW

PROCTOR LOOP DRYER

Never has any loop dryer offered so many operating advantages as the new Proctor. Here are the principal points on which this loop dryer is leagues in the lead over any ever offered...

DRYING UNIFORMITY—By utilizing an entirely new concept of air movement, this new Proctor Loop Dryer-Curer provides the greatest drying uniformity ever offered in this type of equipment.

PRODUCTION—Maximum capacity is now obtained with minimum power requirements, due to the new system of air circulation.

MINIMUM MAINTENANCE—New smooth construction inside and outside of the housing, rugged conveyor design, direct connected motors for fans instead of belt or coupling drives and ready accessibility—mean new low maintenance costs.

FLEXIBILITY—Standard design machine is available for wide range of applications to suit individual mill requirements of production and quality. Machine may be custom designed with the same inherent advantages where special needs must be met.

SHORTER DELIVERY—The new Proctor is designed to give you the best loop dryer in the shortest possible time.

Once you know the full story of this new Proctor loop dryer you'll agree there was nothing ever before like it. Write for details.

PROCTOR & SCHWARTZ · INC ·
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Embossing

from plain to moiré
with one wonderful washfast resin

RHONITE R-1

For a wide range of calendered effects, from friction to deep embossing, from plain to moiré, RHONITE R-1 stands out among the new textile resins. Whether you use a plain, chasing, friction, Schreiner or embossing calender, RHONITE R-1 gives extra durability to the finish—even after repeated washings. Investigate the sure-fire way to put lasting appeal into all types of embossed fabrics with RHONITE R-1. Write us today.

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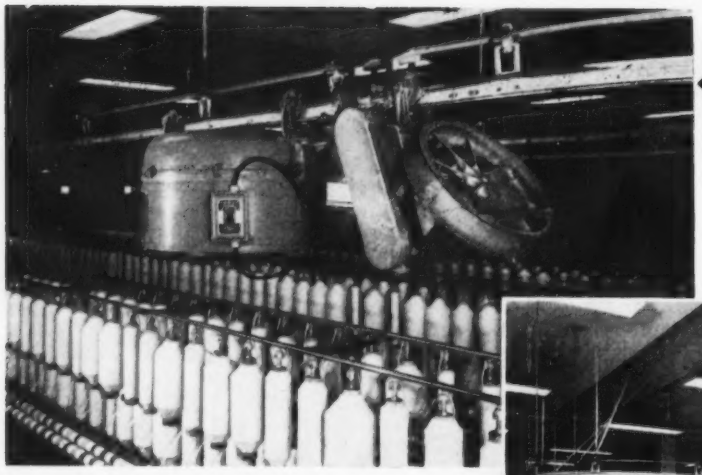
RHONITE *is a trademark, Reg. U.S. Pat. Off. and in principal foreign countries.*



Cleans Up—Cleans Down
For clean ceilings and
clean frames.

How do your spinning rooms compare with this for cleanliness? Photo taken during normal operations.

STANDARD EQUIPMENT FOR *Really Clean Mills*

Note clean ceiling even over air duct.
This mill no longer "blows-down" ceilings.

Overhead cleaning is recognized today as standard practice in mills producing high quality yarn. It is almost axiomatic that a thoroughly cleaned spinning room will produce clean yarn.

American MonoRail Automatic Cleaning for over and under the frame and for ceiling cleaning will prevent lint accumulation, produce better running work, reduce costs, and increase mill efficiency.

Let an experienced engineer consult with you on your cleaning problems. He will also be glad to talk with you about your handling problems.

THE AMERICAN MONORAIL COMPANY

13108 ATHENS AVENUE **CLEVELAND 7, OHIO**

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TORRINGTON'S COMPLETE NEEDLE SERVICE...

A "Plus" in the making of fine Hosiery

No matter how diversified your hosiery line, or how specialized your knitting requirements, Torrington makes the needles to help you achieve the highest standards of quality and fashion. Machine builders and operators alike profit from the performance of Torrington Needles . . . precision-made and machine-tested. Let us arrange a demonstration right in your own mill. Just call our nearest office.

THE TORRINGTON COMPANY
Torrington, Conn., U.S.A.
Established 1866

TORRINGTON NEEDLES

Branches: New York · Philadelphia · Chicago · Boston · Greensboro, N. C. • St. Louis • Bedford, P. Q.–Toronto, Canada • *Pacific Coast Representative:* E. G. Paules, 1762 W. Vernon Ave., Los Angeles 37, Calif. • Broadgate House, 7-10 Eldon St., London E. C. 2, England

WET AND DRY BULB INSTRUMENTS

These Foxboro instruments give separate wet and dry bulb records on the same chart . . . in dry bulb ranges from 32°F. to 212°F. They are exceptionally accurate and stable. Bulbs can be placed up to 200 feet from the instrument. Available as recorders, or air operated (Model 40) and electric (Rotax) controllers, including multi-zone and time-humidity controllers.

DIRECT-READING DEW POINT INSTRUMENTS

Foxboro recently introduced the first simple, continuous dew point measuring instruments for industrial use. Their patented humidity sensitive element, the "Dewcel", requires no water box or moving air. Accuracy is unimpaired by dust or lint. Foxboro recording and controlling instruments, used with the "Dewcel", give direct readings from —50°F. to 142°F. dewpoint, at dry bulb temperatures up to 220°F. Readings easily converted to absolute or relative humidity. Foxboro instruments for dew point include liquid expansion type and electronic type recorders and controllers . . . with either pneumatic or electric control action. The Multi-Record Dynalog* for dew point provides up to 6 records on a single round chart.

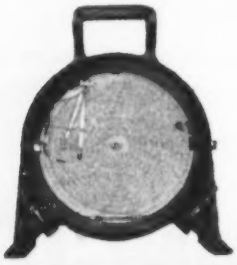
*Reg. U. S. Pat. Off.

better measurement and control of humidity

DIRECT-READING RELATIVE HUMIDITY INSTRUMENTS

Direct-reading relative humidity hygroscopic instruments are designed to operate in temperatures up to 140°F. They are available for recording (including the portable model shown here), and controlling (pneumatic M-40, or electric *Rotax*, operated). Sensitive, accurate, reliable.

Combination temperature and relative humidity recorders (0-100°F and 0-100° R.H.) are shipped from stock.



Ever since it introduced the first successful long-distance wet-and-dry bulb psychrometer, Foxboro has pioneered in the development of new and improved methods for the measurement and control of humidity.

In its knowledge of textile process requirements, and its complete line of better-engineered instruments, there's more than likely the ideal solution to your own problem.

Why not write for complete information, or talk it over with a Foxboro Engineer, now? **The Foxboro Company, 488 Neponset Ave., Foxboro, Mass., U. S. A.**

FOXBORO REG. U. S. PAT. OFF. **HUMIDITY INSTRUMENTS**

FACTORIES IN THE UNITED STATES, CANADA AND ENGLAND

For more information, write direct or use Reader Service post card.

"These large packages from the new Whitin 12" x 6½" Roving Frames are certainly cutting down our card room costs!"
"You're right, Jim, and our spinning costs are cut even more!"

For making large roving packages containing approximately 53 oz. of roving, Whitin now offers a 12" x 6½" Roving Frame.* To mills running 1.00 H.R. or coarser, it offers many advantages and substantial reductions in manufacturing costs.

Large roving packages require less doffing; material handling is also lessened. Both of these factors improve Card Room efficiency. More important are the savings that are made by reducing creeling time and costs in spinning. The 12" x 6½" bobbin holds approximately 100 per cent more roving than the 10" x 5", and its use lowers creeling costs by approximately 45 per cent.

Why not investigate now and make the savings that many other mills are getting with these Whitin 12" x 6½" Roving Frames. For complete details, consult your nearest Whitin Representative.

** Available with Whitin Regular Draft, Inter-Draft or Long Draft*

Whitin MACHINE WORKS

WHITINSVILLE, MASSACHUSETTS

CHARLOTTE, N. C. • ATLANTA, GA. • SPARTANBURG, S. C. • DEXTER, ME.

This Size . . . .

or This Size . . . .

with all "kinds of sizes" in between

SKF's wide range of bearing types and sizes, plus helpful SKF engineering cooperation, makes it possible for you to select the bearing whose characteristics make it the best bearing choice for your particular application.

SELF-ALIGNING BALL BEARINGS

Compensate for angular misalignment resulting from faulty mounting, shaft deflection or distortion of the foundation. For radial loads and moderate thrust loads in either direction.

SPHERICAL ROLLER BEARINGS

Unexcelled for capacity. Inherently self-aligning. The full capacity of the bearing is always available for useful work. Will carry substantial thrust load in either direction.

DOUBLE-ROW DEEP GROOVE BALL BEARINGS

Embody the same design principle as the single-row type, but have lower axial displacement and substantial thrust capacity in either direction. Have very high radial capacity.

SINGLE-ROW DEEP GROOVE BALL BEARINGS

Sustain, in addition to radial load, substantial thrust load in either direction even at high speeds. Available with famous Fairprene Red Seals which keep dirt out and lubricant in. Also with any combination of Red Seals, shields, and snap-rings. Furnished in standard or precision tolerances.

ANGULAR CONTACT BALL BEARINGS

Support heavy thrust load in one direction, sometimes combined with moderate radial load. Can be mounted singly or in tandem for constant thrust load in one direction; also in pairs, face-to-face or back-to-back, for combined thrust and radial loads.

CYLINDRICAL ROLLER BEARINGS

Very high radial capacity and low friction which permits high-speed operation. Easy to dismount, even when both rings are mounted with a tight fit.

BALL THRUST BEARINGS

For pure thrust load in one direction only. Not self-aligning. The load line through the balls is parallel to the shaft axis, resulting in high thrust capacity and minimum axial deflection.

SPHERICAL ROLLER THRUST BEARINGS

For heavy thrust loads, or combined loads which are predominantly thrust, at high speeds on vertical or horizontal shafts. Fully self-aligning.

SKF®

BALL AND ROLLER BEARINGS

SKF INDUSTRIES, INC., PHILADELPHIA 32, PA.

– manufacturers of **SKF** *and* HESS-BRIGHT *bearings.*

7388

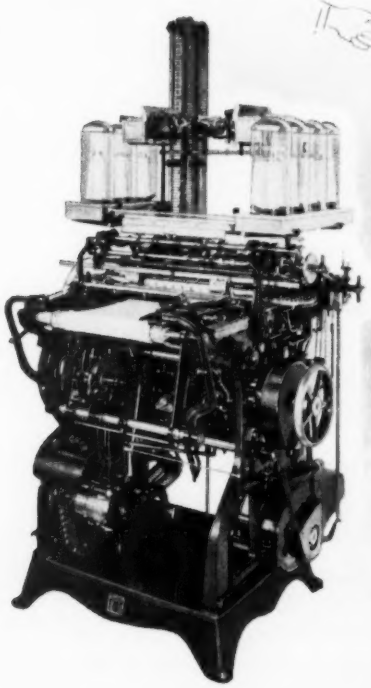
Why do these People Buy?

We're speaking about the purchase of HOSIERY. All markets have their own special problems, so to over-simplify is dangerous. But *impulse buying* is fundamental, for people are mentally lazy.

SALES and PROFIT WISE, what does this mean to You?

The word *impulse* is a fascinating word. PULSE tells the whole story of "sparking markets". Is your production program keyed to the PULSE of the buying market? The weight of the laziness of people, silent, is a frightening thing measured in terms of non-moving markets. To spark this inertia demands maximum effort from sales to production facilities.

75 gauge



TO BE SPECIFIC . . . . . .

As a key to your maximum effort, in the Hosiery field, the WILDMAN 75 gauge High Production Full-Fashioned Hosiery Machine can help you jell production and sales effort for STEPPED UP sales! It features: high production . . . high efficiency . . . high economy . . . automatic in operation. An exceptional performer for producers of fine gauge hosiery . . . Inquire today for complete details.

WILDMAN
Mfg. Co.
NORRISTOWN, PA.

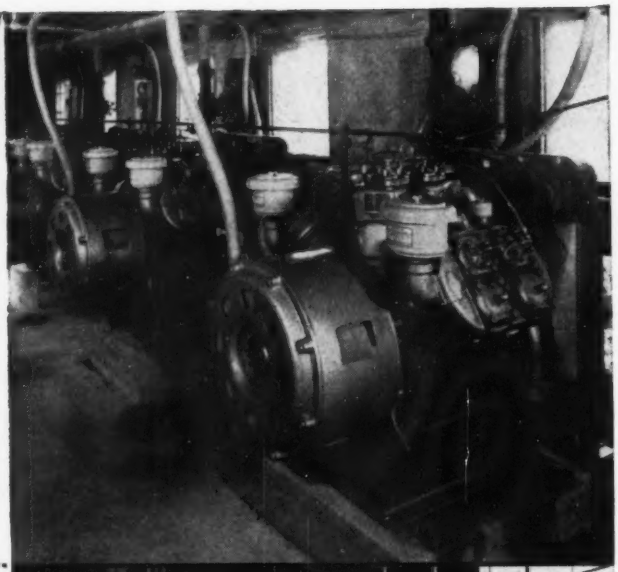
Manufacturers of: Full Fashioned Hosiery Machines; Circular Machines for Outerwear, Underwear, Sportswear, Trimmings; Stop Motions

 For more information, write direct or use Reader Service post card.

listen...

to shop talk

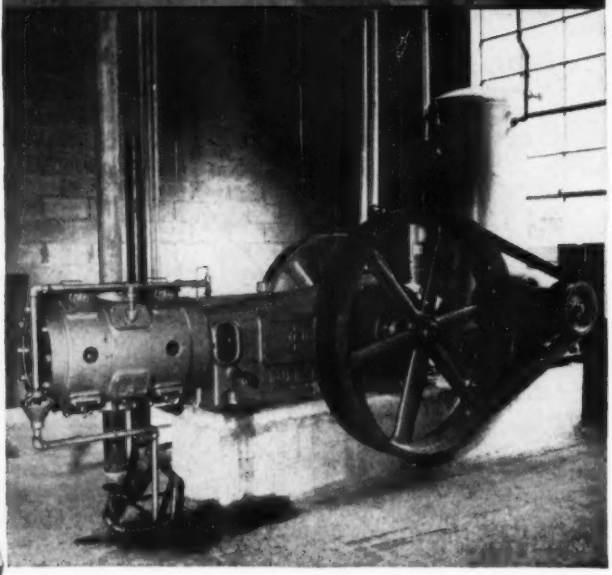
"We bought our first Gardner-Denver WB Compressor in 1939, and liked it so well we have installed six more WB machines over the past 14 years."
—a Pennsylvania Co.



read...

maintenance reports

"We've operated our RX unit 16 to 20 hours per day for seven years with no special attention—not even the replacement of a valve disk."
—a corporation in Tennessee



write...

for complete information

Bulletin WB-10 tells all about the two-stage WB.
Bulletin HAC-40 describes the single-stage RX.

SINCE 1859

GARDNER-DENVER

Gardner-Denver Company, Quincy, Illinois
In Canada: Gardner-Denver Company (Canada), Ltd.,
14 Curity Avenue, Toronto 13, Ontario

THE QUALITY LEADER IN COMPRESSORS, PUMPS AND ROCK DRILLS FOR CONSTRUCTION, MINING, PETROLEUM AND GENERAL INDUSTRY

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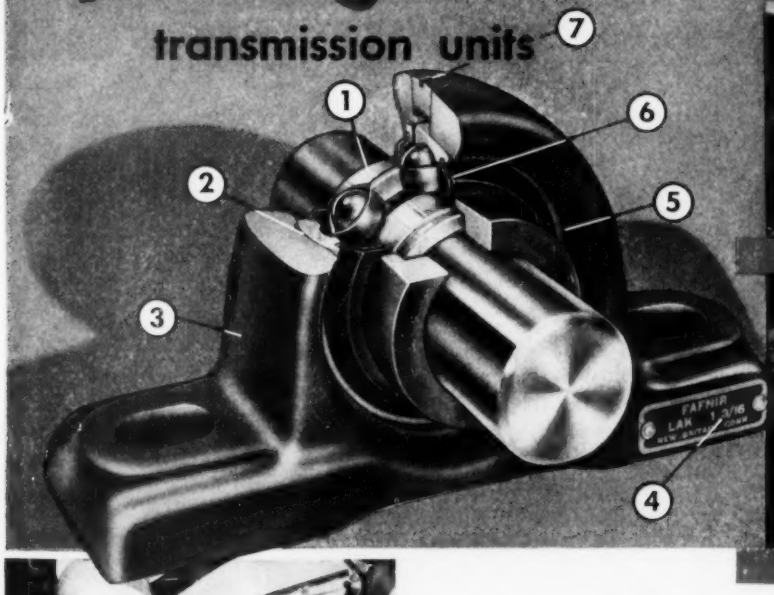
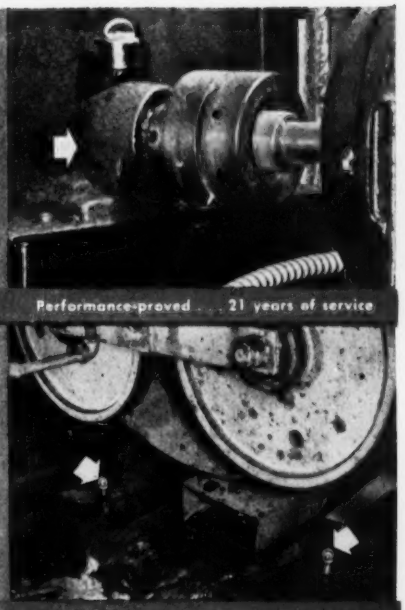
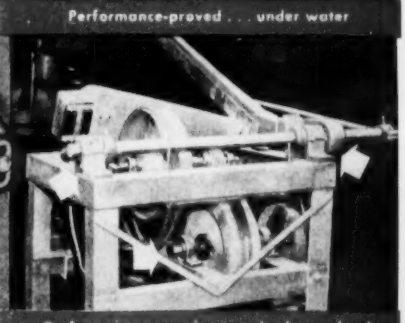
get these

Performance-Proved Advantages in power transmission units



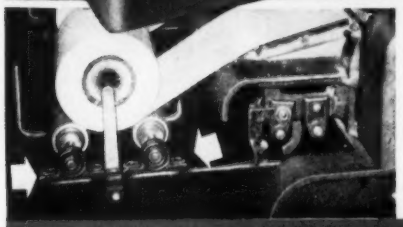


Performance-proved . . . 21 years of service

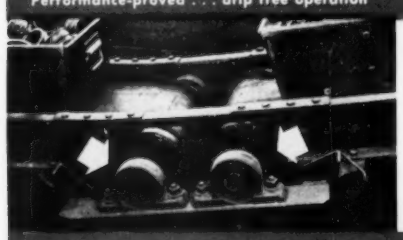


Performance-proved . . . under water

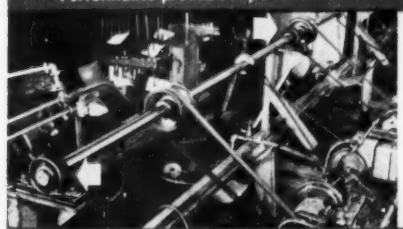
Performance-proved . . . under heavy loads



Performance-proved . . . drip free operation



Performance-proved . . . power saver



Performance-proved . . . lubricant saver

1. Fafnir-originated wide inner ring ball bearing with self-locking collar — easiest of all to install.
2. Self-aligning — spherical O.D. of bearing mounted in corresponding spherical housing seat provides unrestricted self-alignment.
3. Compact, rugged, one-piece housing provides complete support for bearing. Can be mounted in any position.
4. Wide range of types and sizes. Standard series illustrated, sizes from ½" to 2 15/16".
5. Bearing may be easily removed and replaced if necessary.
6. Integral, frictionless Mechani-Seals — keep lubricant in, contaminants out.
7. Pre-lubricated with provision for relubrication.

The Fafnir Bearing Company, New Britain, Conn.

FAFNIR

BALL BEARINGS

MOST COMPLETE LINE IN AMERICA

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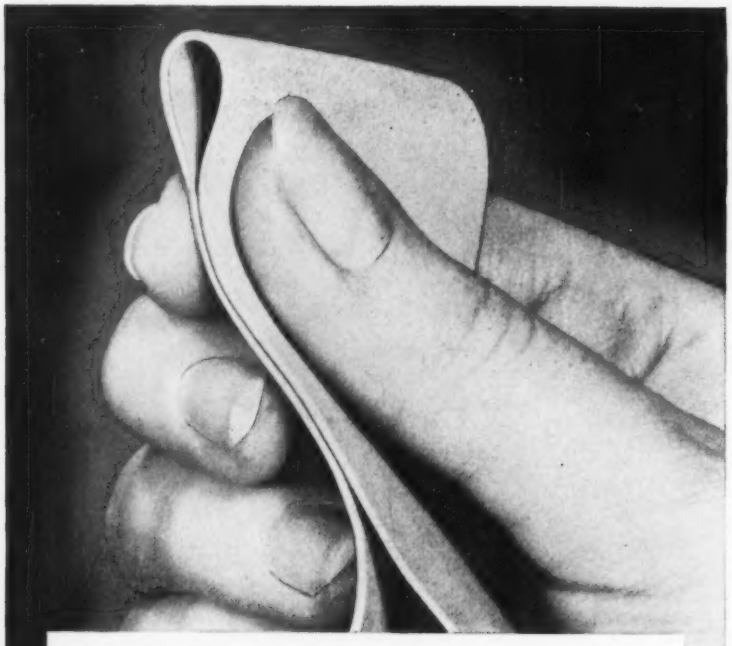
This means



SEAMLESS AND SUPER-FLEXIBLE, Armstrong's Accotex Aprons give you the smooth slip-roll action essential to spinning superior yarn. The tough inner surface, made of a special compound, stands up under millions of trips over the nose bar.

apron's super-flexibility
smooth slip-roll action

Armstrong's improved NO-750 helps you draft clean, uniform yarn on single-apron frames

An apron really has to be flexible to work well on many single-apron frames. Otherwise, it may "chatter" or buckle, giving you the irregular slip-roll action that means uneven yarn.

Armstrong has developed an apron with the extra flexibility you need for the newest single-apron spinning equipment. It's the improved NO-750 Accotex® Apron. Once you see how closely it hugs the nose bar, you'll be convinced it has all the flexibility you need. Watch how it runs smoothly under the slip roll. Notice that there's no seam to cause bumping or buckling. You'll understand why this Armstrong's Accotex Apron makes such a big difference in yarn quality.

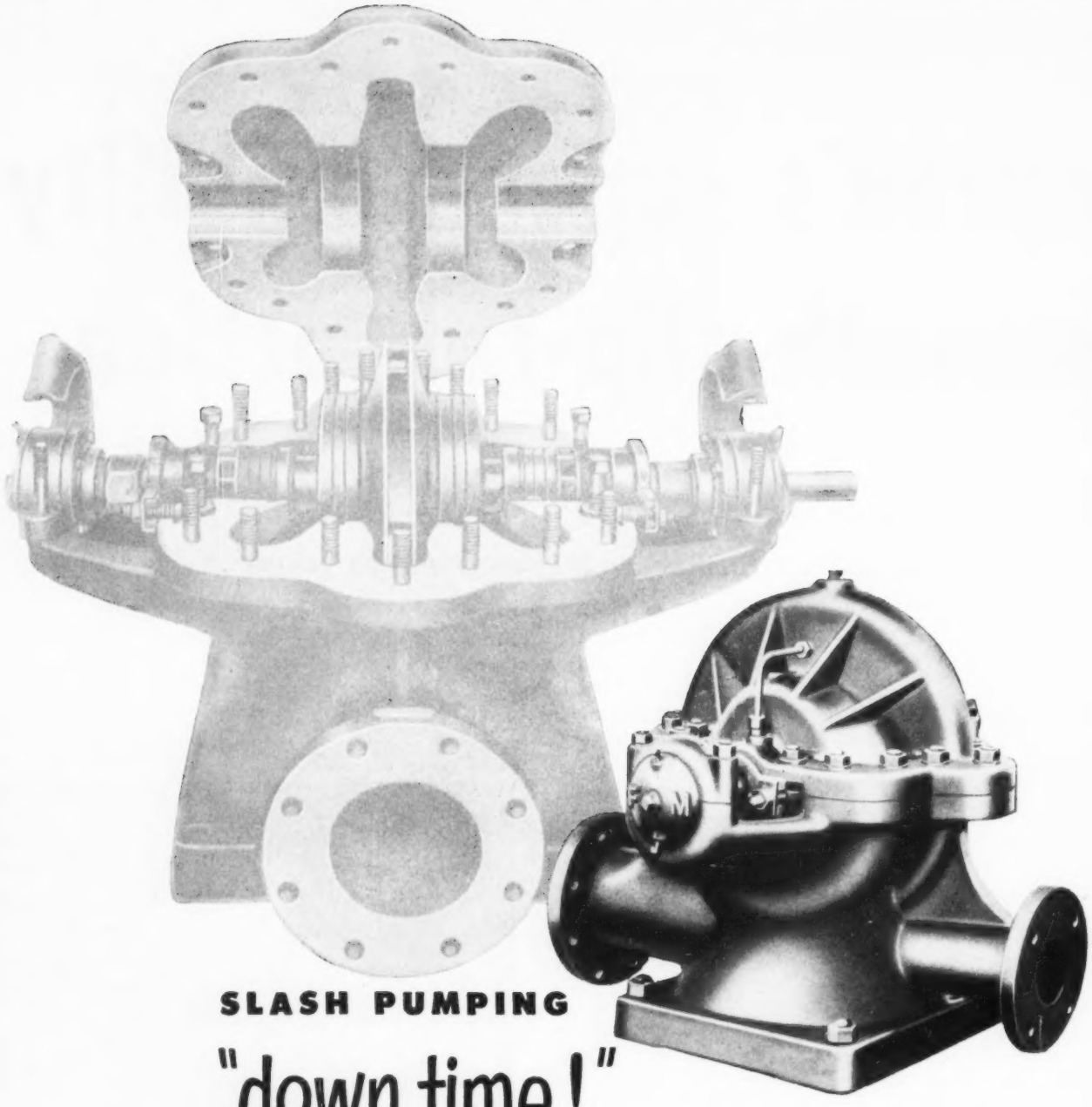
Everything about the NO-750 contributes to long life and efficient spinning. The smooth outer face won't crack or scuff up. The inner face runs clean and resists nose bar abrasion. Between these two layers of rubber, a core of tough cotton cords prevents curled edges without reducing flexibility.

For double-apron spinning, too, Armstrong's Accotex Aprons are inexpensive assurance that the yarn you produce will be clean and uniform. Ask your Armstrong man to set up a test frame in your mill or write to Armstrong Cork Company, Textile Products Department 6408 Dauphin Street, Lancaster, Penna. These aprons are available for export.

SATIN FINISH. Accotex Aprons are ground to the exact thickness you specify. Then an exclusive Armstrong finishing process gives them a satin-smooth working surface that is capable of many years of service without cracking, breaking, or scuffing.

ARMSTRONG'S ACCOTEX APRONS

one of Armstrong's complete line of textile mill supplies



SLASH PUMPING "down time!"

You slash pumping "down time"—when you have a pump that requires minimum maintenance . . . when the parts are easily accessible when maintenance is necessary . . . when you have a Fairbanks-Morse Split-Case Centrifugal Pump!

See how easily this sturdy pump is inspected . . . lift the split casing and the entire rotating element can be removed without disturbing driver or pipe connections . . . even the bearings can be removed without use of a bearing puller!

See your Fairbanks-Morse Branch Pump Engineer on this Split-Case Single-Stage Centrifugal and the rest of his complete pump line. Fairbanks, Morse & Co., Chicago 5, Illinois.

FAIRBANKS-MORSE

a name worth remembering when you want the best

PUMPS • SCALES • DIESEL LOCOMOTIVES AND ENGINES • ELECTRICAL MACHINERY
RAIL CARS • HOME WATER SERVICE EQUIPMENT • FARM MACHINERY • MAGNETOS

A new combination for new fabric opportunities

The new man-made fibers now get a new teammate . . . Stymer R!

The growing popularity of modern, lightweight, wrinkle-resistant fabrics—woven of new fibers such as "Dacron" polyester fiber or "Orlon" acrylic fiber—is one of the more important trends in the textile industry. And it can be counted on to *gain momentum* in the coming months, as new filament fibers become increasingly available.

The successful looming of new constructions, using new fibers, requires important changes in techniques, in methods . . . *and in the warp size employed.*

This is why Monsanto has added *Stymer R* for the sizing of the newest filament synthetics to its famous Stymer family. Like Stymer S, for filament acetate, and Stymer LF, for solution-dyed acetate, Stymer R is further evidence of the way Monsanto meets—and frequently anticipates—the ever-changing, ever-growing needs of the industry.

If you are considering the addition of synthetic or blended fabrics to your line, why not be prepared—get in touch with MONSANTO CHEMICAL COMPANY, Textile Chemicals Department, Boston 49, Mass.

What is Stymer R? Stymer R is a white granular material readily soluble in water at 190°F. It is a vinyl compound, developed for sizing filament polyester and acrylic fibers. Free-flowing, it is relatively easy to handle under all conditions. An ideal companion for man-made fibers!

Stymer: Reg. U. S. Pat. Off.
*"Dacron" and "Orlon" are DuPont registered trademarks.

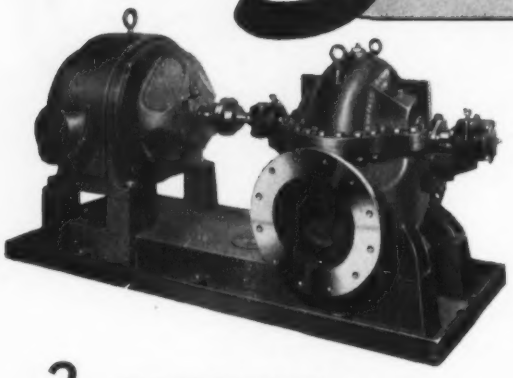
MONSANTO®

SERVING INDUSTRY . . . WHICH SERVES MANKIND

For more information, write direct or use Reader Service post card.

"Buffalo" *Tips on Better Pumping*

3 TYPES of PUMPS and what each offers you —

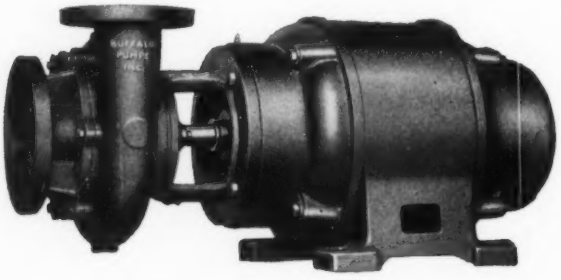


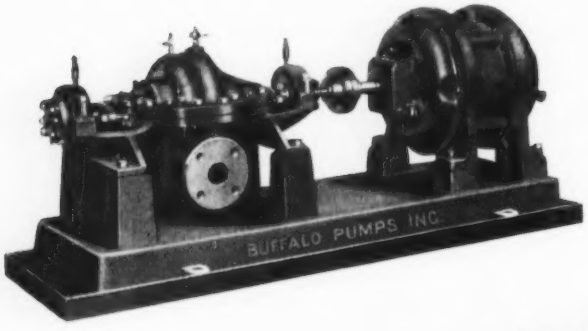
1. DOUBLE SUCTION

This "Buffalo" Pump offers a high degree of efficiency in pumping large volumes of clear water. Available in capacities for 10 to 10,000 gpm at up to 300 ft., these pumps are hydraulically balanced—water entering both sides of the impeller in equal volume and pressure. Bearings on each end of shaft mean extra long wear. Horizontally divided casing makes for extreme accessibility in inspection and servicing. Full details in BULLETIN 955-P.

2. CLOSE-COUPLED

Here is a ruggedly compact pump for those "close-quarters" installations. Pump and motor are rigidly mounted together with impeller on motor shaft, which means *permanent alignment*. "Buffalo" builds these pumps in a variety of alloys for specific liquids, with threaded or flanged inlets and outlets. Pump casing may be rotated, or removed for inspection — an important maintenance factor. WRITE for BULLETIN 975-B.





3. MULTI-STAGE

Each extra stage adds pressure! That's why pumps like these "Buffalo" Type "RR" (2 and 4-stage models) operate efficiently against high pressures (500 psi or 1500 ft. heads). These "Buffalo" Pumps have proven themselves very durable in boiler feed and other clear water installations. Bearing support on both ends of the shaft — rugged, horizontally divided casing — solid, rigid base — all contribute to easy maintenance and long life. For further details, write for Bulletin 980-B.

"Buffalo" BUFFALO PUMPS, INC.

184 MORTIMER STREET . BUFFALO, N. Y.

Subsidiary of Buffalo Forge Company

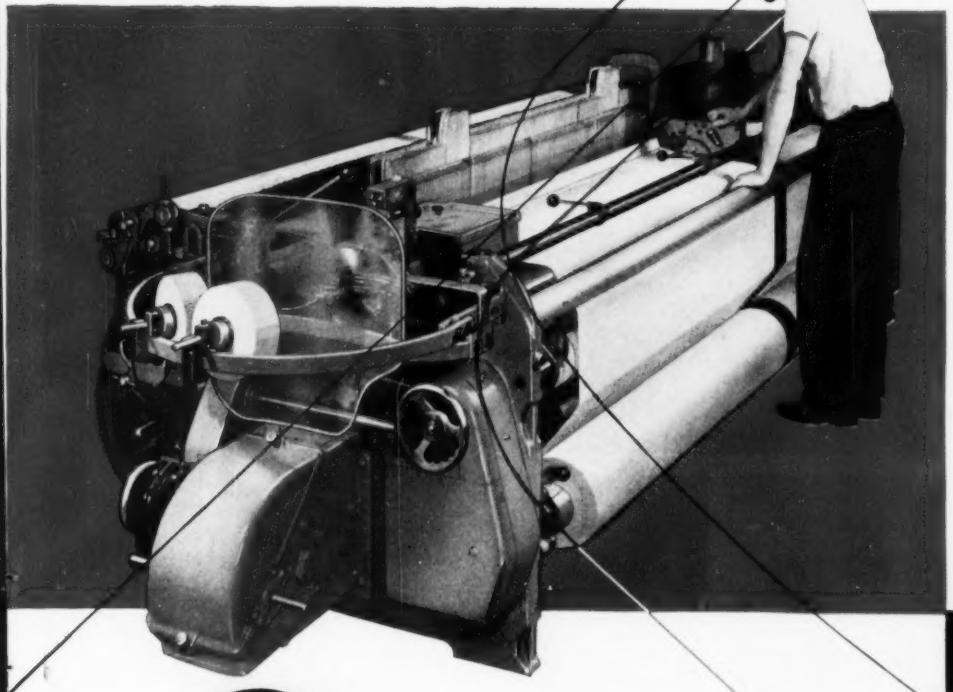
Canada Pumps, Ltd., Kitchener, Ont. Sales Representatives in all Principal Cities

A BETTER CENTRIFUGAL PUMP FOR EVERY LIQUID

● For weaving better quality, more lofty fabrics . . . worsteds, woolens, spun synthetics and blends . . . faster, at much lower costs, with greater efficiency—investigate the exciting profit possibilities of the new . . .

WARNER & SWASEY—SULZER

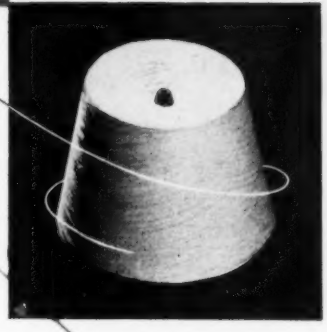
weaving machine



MODELS

M-2820	**80" reed**
M-2860	**95" reed**
M-2960	**110" reed**

- **240 picks per minute**
- **One or more widths of cloth at one time**
- **Larger, stationary filling package**



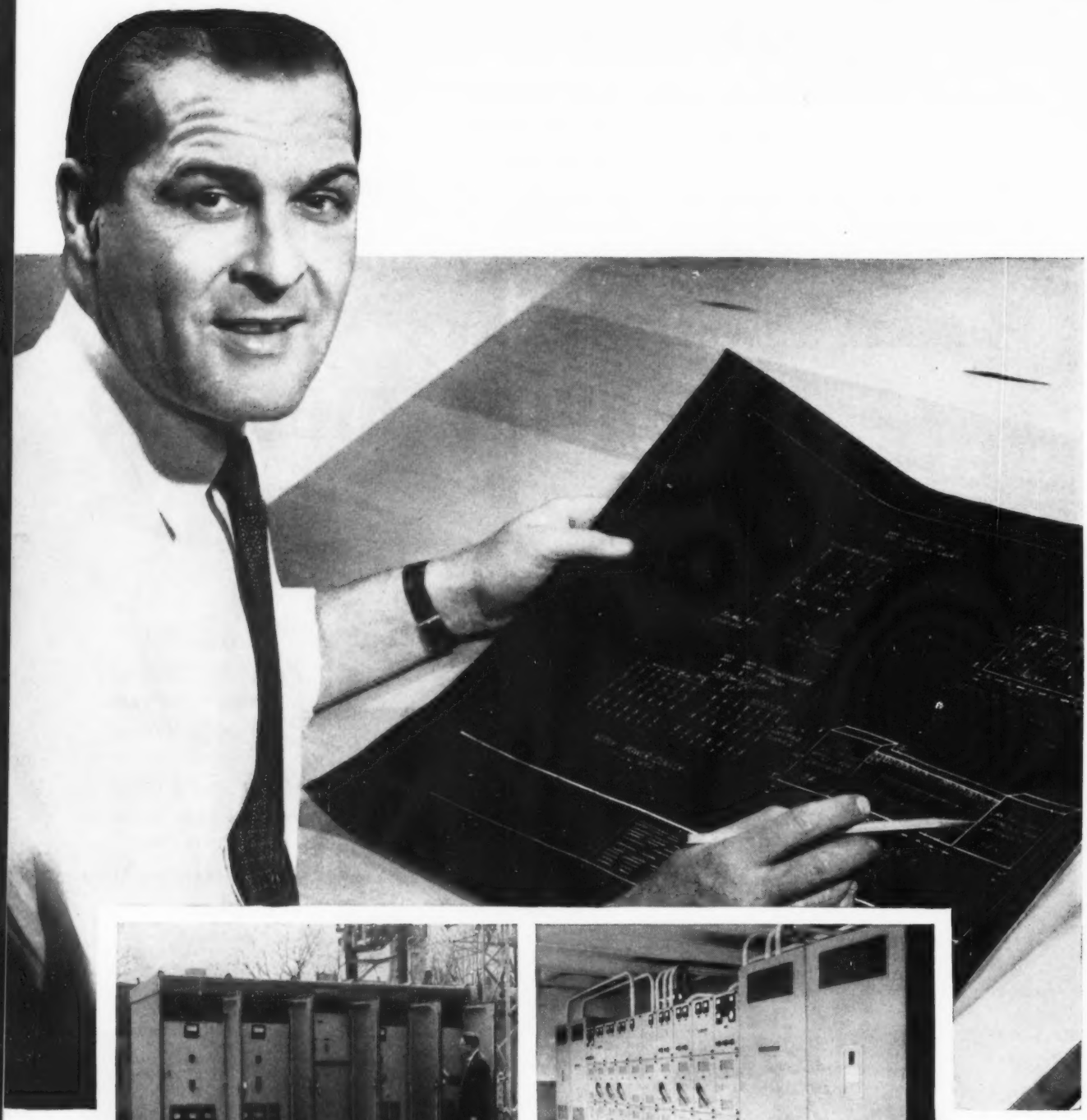
WARNER SWASEY

TEXTILE MACHINERY DIVISION

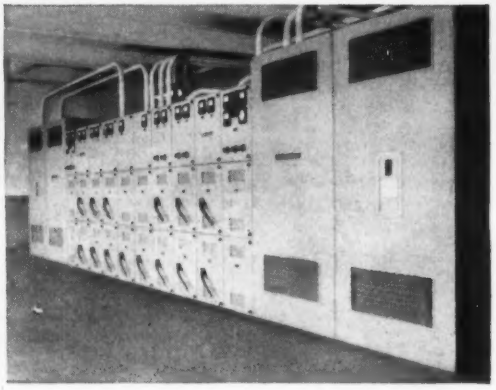
SALES OFFICES

Main Office and Factory: **5701 Carnegie Ave., Cleveland 3, Ohio**
61 Rivulet St., North Uxbridge, Mass.
6910 Market St., Philadelphia, Pa.
Candler Building, Atlanta, Georgia
1820 Browning Ave., Charlotte, N. C.

YOU CAN PRODUCE IT BETTER, FASTER, FOR LESS WITH WARNER & SWASEY MACHINE TOOLS, TEXTILE MACHINERY, CONSTRUCTION MACHINERY

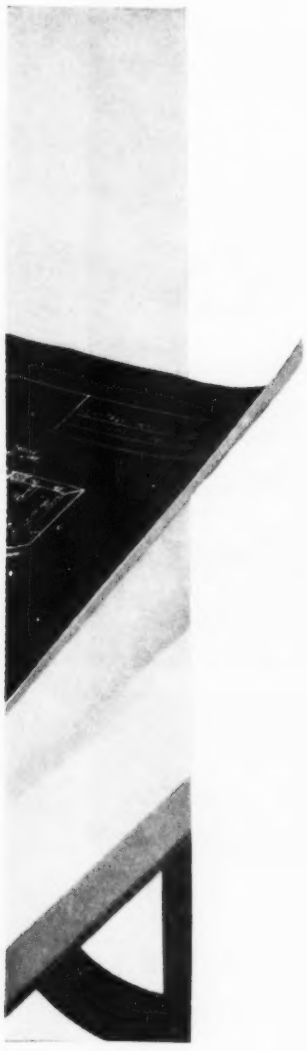


It's as easy to inspect these outdoor switchgear units as it is to open the door of your office. Yet, there's absolutely no danger to employees making checks. Modern Westinghouse switchgear installations will give your mill safe, dependable power system protection for years.



This Westinghouse indoor power center is located close to the load, thereby reducing cable runs and line losses. Duplicate transformers at each end assure continuous power. If a fault occurs on one line, the other transformer will handle the temporary overload while repairs are made.

Two Westinghouse units modernized this mill's entire power system



When officials of the Gaffney Manufacturing Company, one of the most modern print cloth mills in the country, called in Westinghouse, they discovered how simple and inexpensive a modern power distribution system can be. Westinghouse engineers studied their problem and recommended only two new units—outdoor metal-clad switchgear and an indoor power center. Yet, look at the benefits they got!

Installation costs cut 10%—voltage improved 5%—Both the Westinghouse switchgear and power center were shipped as completely assembled units—pre-tested and wired at the factory. This saved over 10% in installation costs. Line losses were lowered and 100 feet of cable runs were saved by locating the power center indoors, close to the load. Over-all voltage conditions were improved approximately 5%. More power was available for increasing loads.

High service continuity—low maintenance—Dual feeder cables and transformers in the power center assure continuous power and flexibility. If a fault should occur on one line, the other transformer will carry the temporary overload until repairs can be made. Draw-out air circuit breakers and air-cooled transformers eliminate all of the maintenance necessary when oil-filled types are used. Also, all units are easily accessible, and can be installed or removed with file drawer efficiency.

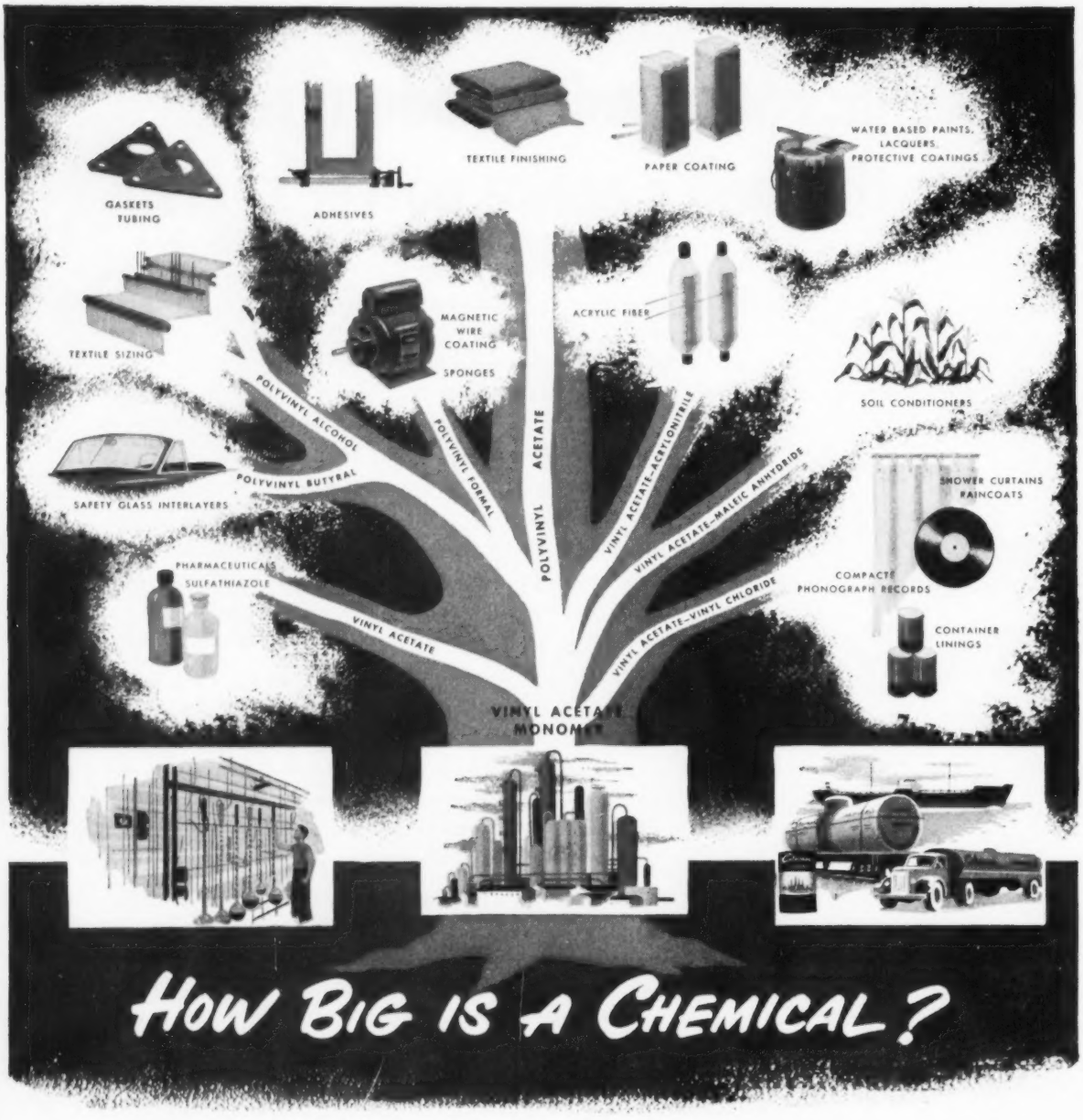
Complete safety for personnel and equipment—Careless employees can't get shocks because all power equipment and feeder circuits are completely enclosed. High-interrupting-capacity air circuit breakers give positive protection against fault currents and dangerous overloads. There's no chance of fire or explosion. The enclosed air-cooled transformers are noninflammable, nonexplosive and contain no corrosive liquids.

There may be an easy, inexpensive solution to your power problems—If you're expanding, modernizing or just want to get the "bugs" out of your present power distribution system, call your Westinghouse representative. He'll go over your electrical requirements and show you how expert Westinghouse planning assistance and highly efficient equipment can give you benefits like these. Westinghouse Electric Corporation, P. O. Box 868, Pittsburgh 30, Pa.

J-94998

YOU CAN BE **SURE**...IF IT'S

Westinghouse



CELANESE* VINYL ACETATE MONOMER OFFERS CREATIVE OPPORTUNITIES TO HUNDREDS OF AMERICAN INDUSTRIES

How big is a chemical? As large as its production volume . . . as broad as its applications. Vinyl Acetate Monomer—the basis for countless plastic products, paints, paper, textiles, pharmaceuticals, adhesives—is big. With the start of full-scale production at the Celanese Pampa plant, Vinyl Acetate gains a bigness that opens the door to more intensive research, far-reaching product development.

Celanese Vinyl Acetate Monomer—ready in tankcar quantities within a few weeks—will be produced by specially developed processes, utilizing Celanese-produced raw materials, in the newest, most up-to-date petrochemical plant in the country. Two grades of monomer will be available: A-grade, stabilized with diphenylamine, and H-grade, inhibited with hydroquinone.

The possibilities and opportunities for vinyl acetate derivatives warrant thorough investigation. We will be glad to assist you with complete technical data and literature. Write:

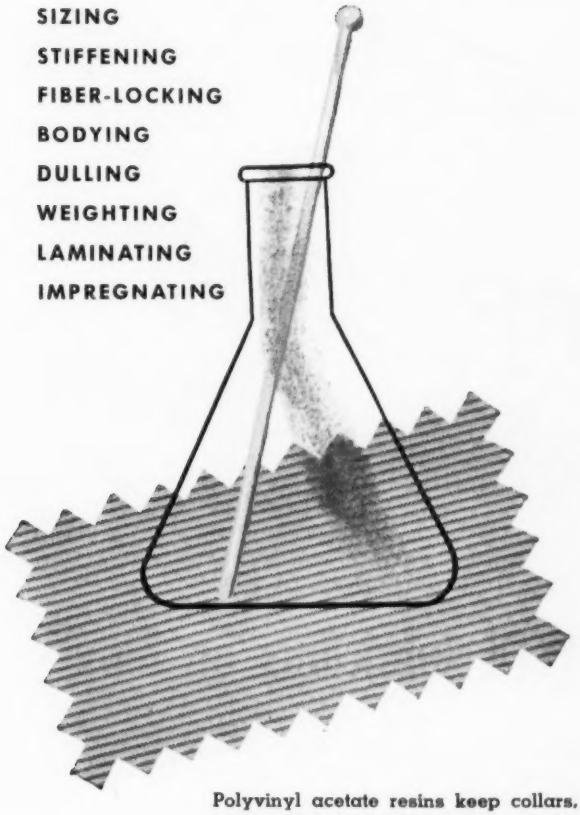
Celanese Corporation of America, Chemical Division, Dept. 571-H. 180 Madison Avenue, New York 16, N. Y.

Celanese* CHEMICALS

*Reg. U. S. Pat. Off.

Vinyl Acetate Works Many Wonders in Textile Finishing

SIZING
STIFFENING
FIBER-LOCKING
BODYING
DULLING
WEIGHTING
LAMINATING
IMPREGNATING



Polyvinyl acetate resins keep collars, shirts, cotton goods softly stiff through countless launderings and dry-cleanings. They prevent raveling, thread slippage . . . protect fabrics against wear and abrasion, chemicals and mildew. Polyvinyl alcohol, a vinyl acetate derivative, is a valuable size and snag-resistant finish for nylon, rayon, and silk stockings.

Celanese production of vinyl acetate monomer assures resin manufacturers dependable supplies of this basic chemical . . . offers converters and finishers increased opportunities for new process developments and improvements.

For more information, write direct or use Reader Service post card.

...with TYCOL lubricants on hand!

The Lube that was "Tailored" for Textile Mills! Here's what we mean by lubricants "engineered to fit the job": awhile back, the Engineering Department of a well-known mill asked us to develop an oil that would meet their exacting loom lubrication requirements. After intensive study of the problem, we came up with Tycol Amortac 76. In actual loom usage, we *proved* Amortac to be easy to handle and virtually "splatter-proof," even when looms are being blown down. Result? An oil that features initial low cost . . that by itself satisfies complete loom lubrication requirements (no chance of a lube mix-up!) . . . minimizes 'seconds' . . . will not build up with lint while feeding through the bearing opening. In every way, Amortac 76 is engineered to do a specific job. One reason why it pays to consult your local Tide Water Associated office . . . first!

Over 300 Tycol industrial lubricants are at your disposal . . . engineered to fit the job!

REFINERS AND MARKETERS OF VEEDOL . . . THE WORLD'S MOST FAMOUS MOTOR OIL

TYCOL
INDUSTRIAL LUBRICANTS

Boston • Charlotte, N. C. • Pittsburgh
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TIDE WATER ASSOCIATED OIL COMPANY
17 BATTERY PLACE - NEW YORK 4, N. Y.

For more information, write direct or use Reader Service post card.

LIZE THE SQUEEZE with AIR CYLINDERS

Two Miller Air Cylinders (one at each end of the pressure roll) provide the steady, even "squeeze" so essential for the pressure rolls of Textile machinery.

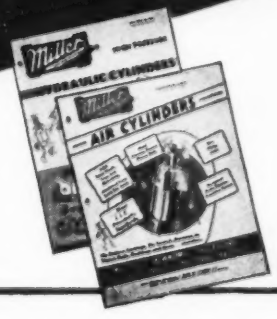
The variation in friction co-efficiency in these cylinders is practically negligible. Thus, whether the pressure is to be constantly held or re-applied as required the "twin" cylinders can be depended upon to react simultaneously and in perfect unison to the slightest adjustment. Also, any desired pressure on the rolls can be duplicated and maintained at will.

These top performance qualities are "built-in" features of Miller Standard Air Cylinders proven 98% plus efficient (at 80 psi). The Miller Non-Adjustable Seals assure *consistency* of performance throughout cylinder life. This consistency is further guaranteed over exceedingly long periods of time by such standard Miller features as solid steel heads and caps, hard chrome plated piston rods, dirt wiper seals and non-corrosive cylinder barrels.

Miller

AIR CYLINDERS FOR

- **Padders**
- **Washers**
- **Steamers**
- **Rope Squeezers**
- **Bleaching Equipment**
- **Dyeing Equipment**
- **Other Textile Machinery**



WRITE FOR CYLINDER BULLETINS A-105 and H-104

Complete Miller cylinder line includes: air cylinders, 1½" to 20" bores, 200 PSI operation; low pressure hydraulic cylinders, 1½" to 6" bores for 500 PSI operation, 8" to 14" bores for 250 PSI; high pressure hydraulic cylinders, 1½" to 12" bores, 2000-3000 PSI operation. All mounting styles available.

SALES AND SERVICE FROM COAST TO COAST

CLEVELAND • YOUNGSTOWN • DAYTON • PITTSBURGH • PHILADELPHIA • BOSTON • HARTFORD • NEW YORK CITY • BUFFALO • ST. PAUL • GRAND RAPIDS • DETROIT • FLINT • FORT WAYNE • SOUTH BEND • INDIANAPOLIS • MILWAUKEE • LOUISVILLE • KANSAS CITY • SEATTLE • LOS ANGELES • SAN FRANCISCO • BALTIMORE • DENVER • ST. LOUIS • MOLINE • CHICAGO • HOUSTON • TORONTO, CANADA and OTHER AREAS

Miller

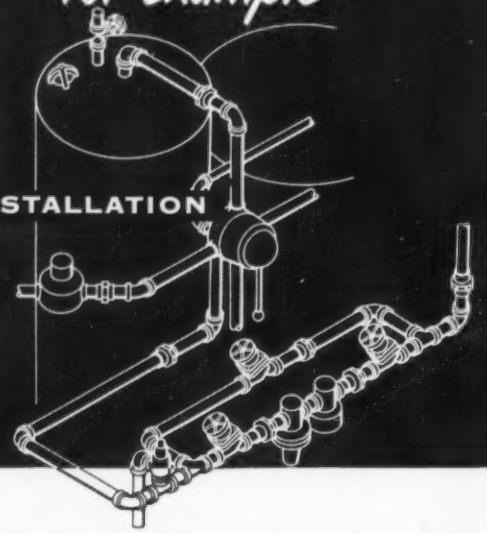
MILLER MOTOR COMPANY

2002-06 N. Hawthorne Ave., Melrose Park, Ill.

AIR & HYDRAULIC CYLINDERS • BOOSTERS • ACCUMULATORS
COUNTERBALANCE CYLINDERS

This Valve Stops the "Up" in Upkeep

...on Water Service Piping, for example



At the Excello Paper Products Co., Inc., Cincinnati, using Crane Diaphragm valves on city water supply lines; also on plant service water piping, hot and cold.

VALVE SERVICE RATINGS

SUITABILITY:
Doing what other valves couldn't

FEATURES:
Packless - Long Life Diaphragm

MAINTENANCE COST:
No regular maintenance needed

SERVICE LIFE:
Outlasting other valves many times

OPERATING RESULTS:
Safety hazard to personnel stopped

AVAILABILITY:
Crane catalog item - No. 1610

THE CASE HISTORY

Typical of many processes using a lot of water, this plant has numerous open end lines and hose connections. And because of very frequent operation, the valves formerly used in these lines required more than usual servicing to keep up with leakage, dripping hose lines, and hazardous, messy floors.

Crane No. 1610 Diaphragm valves were selected to replace the troublesome conventional valves. Immediately these packless valves stopped the annoyance and expense of stuffing box and seat leakage. Their pliable disc insert ring made a tight seat on open end lines with minimum effort on handwheels.

The replacements were started about 2 years ago. With no attention whatsoever, all Crane Diaphragm valves remain tight, and the plant's water leakage problem remains solved.

THE VALVE

Water is but one of hundreds of fluids Crane Packless Diaphragm valves handle efficiently. Their sealed-to-fluid bonnet and "soft-seating" disc are ideal for all sorts of hard-to-hold liquids and gases; also for sludges, slurries, etc. Separate disc and diaphragm design saves diaphragm wear; permits tight seating even should diaphragm fail. Choose these valves from a wide range of materials, lined or unlined body, for corrosive or ordinary applications. See your Crane Catalog, or your Crane Representative.

THE BETTER QUALITY...BIGGER VALUE LINE...IN BRASS, STEEL, IRON

CRANE VALVES

CRANE CO., *General Offices:* 836 S. Michigan Ave., Chicago 5, Illinois
Branches and Wholesalers Serving All Industrial Areas

VALVES • FITTINGS • PIPE • PLUMBING • HEATING

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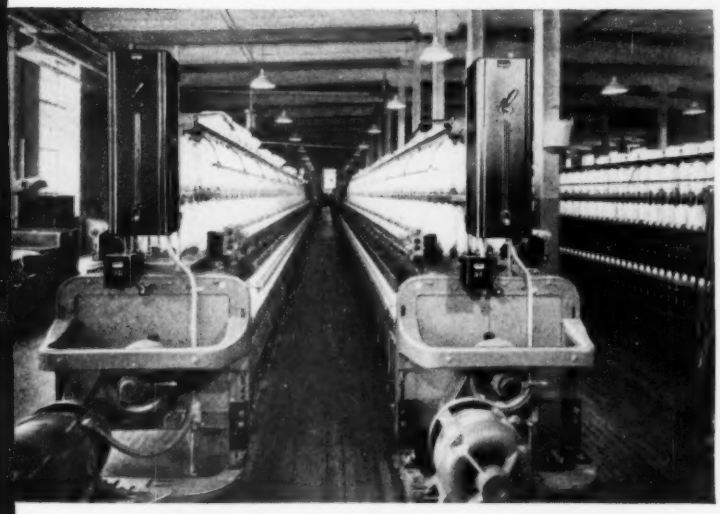
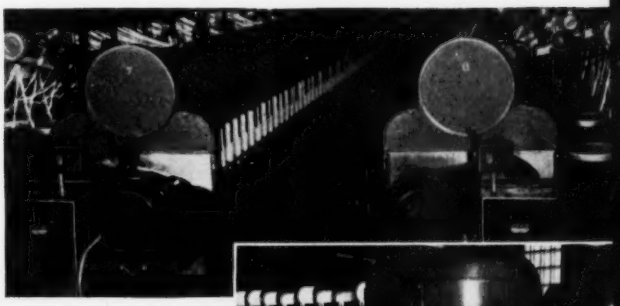
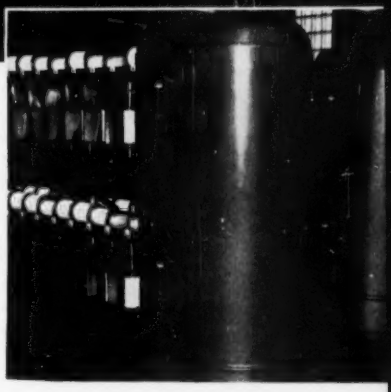
CUTLER-HAMMER

MOTOR CONTROL FOR THE TEXTILE INDUSTRY

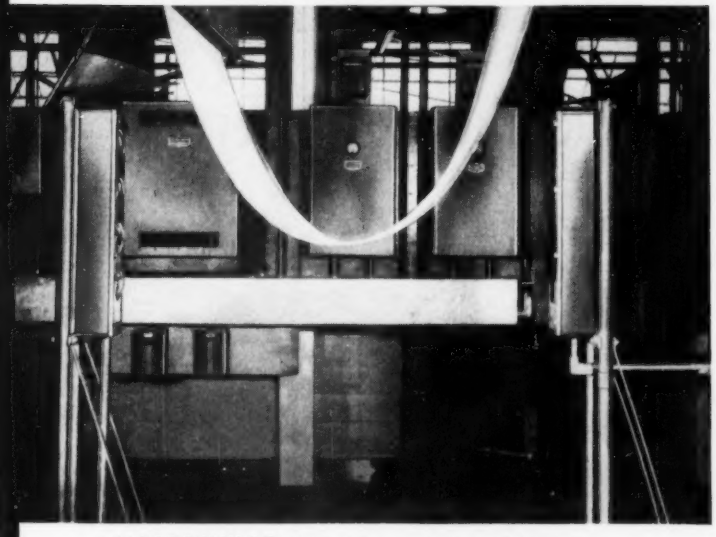


at **STATESVILLE.** Cutler-Hammer Combination Starters and Shipper Rod Switches on spinning frames in STATESVILLE DIVISION, The Seminole Mills, Statesville, N. C.





for **WAUMBEC**
at Manchester, N. H. Cutler-Hammer Push-button Manual Starters on uptwisters and Primary Resistor Type Magnetic Starters on roving frames. Cutler-Hammer control also used on looms and spinning frames in this great mill.



at **MOORESVILLE.** Cutler-Hammer Electronic Dancer Roll Regulator and Range Drive Controller on slack drying range at Mooresville Mills, Mooresville, N. C.

NEW CUTLER-HAMMER LOOM SWITCH

with NEMA 1A Lint-Tight Gasketed Enclosure

Pushbutton operation—an achievement for this type of starter. Stop button can be padlocked.

Stronger, smaller, drawn steel case. Unique welded-steel mounting pedestal available to create a *complete* assembly with unparalleled resistance to mechanical shock.

New NEMA 1A lint-tight gasketed enclosure prevents entrance of lint and dust.

Service proven, positive make, quick break operating mechanism built on *steel* framework.

"Out in the open" contacts for quicker inspection and easy renewal *on the job*. Most dependable overload protection—famous Cutler-Hammer eutectic element type—prevents unnecessary shutdowns without sacrifice of *positive* motor protection.

Vibration resistant. Mechanism "floats" in truly effective *live rubber* mounting bushings.

Too important to be left to chance

Men who *know* textile production costs are careful buyers of motor control equipment. They know a single work stoppage caused by faulty control can easily cost more than the entire purchase price of the control. In consequence, they do two things. First, they compare *all* makes of motor control to determine which is most dependable. Second, they specify this make by *name* on every purchase order.

Cutler-Hammer Motor Control is the natural choice of men who know dependability in motor control is too important to be left to chance. They quickly find Cutler-Hammer dependability is not a mere competitive claim but a *fact* that can stand out clearly in a mill's production records to reflect favorably on their own ability and good judgment. They also find that Cutler-Hammer dependability is not an occasional happenstance... that it is the earned advantage of the longest and most intensive specialization in motor control engineering... that it can safeguard *every* control need from the simplest starter to the most complex electronic equipment.

You too will find it pays to insist on Cutler-Hammer Motor Control and refuse all substitutes. An adequate network of Authorized Cutler-Hammer Distributors throughout the textile manufacturing areas insures prompt attention and supply. CUTLER-HAMMER, Inc., 1457 St. Paul Avenue, Milwaukee 1, Wisconsin.

CUTLER-HAMMER
MOTOR CONTROL
C-H

Research... cornerstone of advanced instrumentation

RESEARCH is a job that never ends. This holds particularly true in the field of instrumentation, for every advance in manufacturing procedures brings a demand for better techniques for measurement and control.

But research, to fulfill its true function, must do more than keep pace with progress. In Honeywell's Industrial Division, research points far beyond today's frontiers. Here, skilled scientists are intensively engaged in programs that are developing solutions not only for present problems, but also for the much more demanding applications of the future. Drawing on the related sciences of physics, electronics, metallurgy, chemistry and nucleonics, they are helping to bring instrumentation into its own as a new and essential science. Fundamental research, which attacks control problems in their most basic aspects, is supplemented by development studies to evolve practical equipment for factory use. Working in close cooperation with research, Honeywell application engineers translate new developments into working systems, custom-fitted to today's process requirements.

Covers all phases of control

Each of Honeywell's several laboratories works in specialized but related phases of instrumentation.

The primary elements laboratory, for example, searches into ways to improve the performance of today's elements—and to utilize the latest scientific discoveries in producing new detecting devices with greater range, speed, flexibility and accuracy.

In the precision measurement laboratory, Honeywell's own "Bureau of Standards" performs the most exacting electrical and mechanical measurements to provide precise evaluation of new developments.

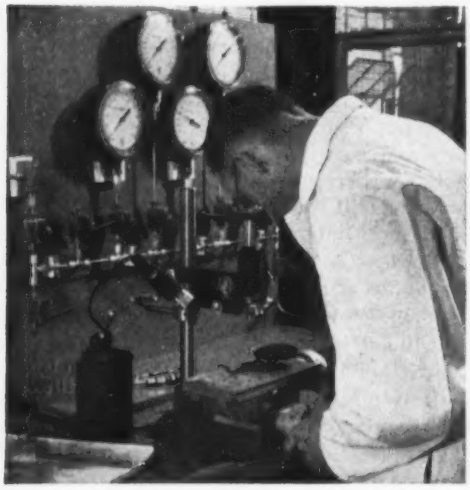
The nuclear engineering laboratory develops specialized techniques of measurement and control essential to the nation's accelerated atomic energy program.

The servomechanisms laboratory studies the techniques which will be needed to control the "automatic factory" of the future . . . operates processes in miniature, and analyzes their control performance.

What of tomorrow?

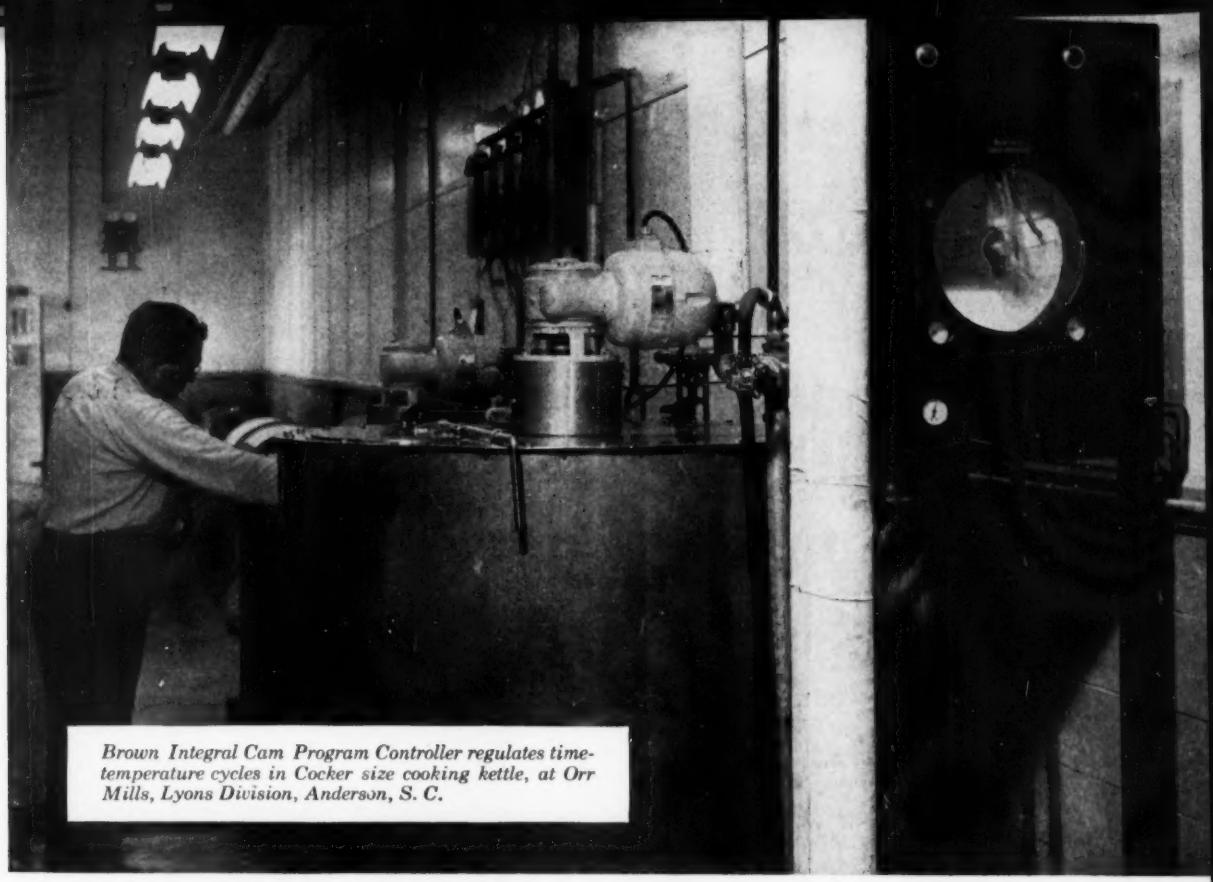
To the instrument user—in factory or laboratory—Honeywell's research has twofold significance. It assures continued refinement of instrumentation for the measurement and control work that's to be done today. And it promises new and revolutionary equipment from Honeywell . . . "First in Controls" . . . for the increasingly important role that instrumentation will play in tomorrow's world.

Space-saving, *for kettle*



PRECISION MEASUREMENTS *aid study of new pressure measuring elements.*

NEW CONTROL TECHNIQUES *are developed in the servomechanisms laboratory.*



Brown Integral Cam Program Controller regulates time-temperature cycles in Cocker size cooking kettle, at Orr Mills, Lyons Division, Anderson, S. C.

cost-cutting control *time-temperature programs*

THE Brown Integral Cam Programmer sets new standards for compactness and flexibility of time-pattern control for dyeing and size cooking kettles. This single instrument now does the work that formerly required two to four separate units!

Housed in one case is the entire system for recording and automatically regulating two independent temperature programs. Program cams are mounted integrally with the controller. There is a separate recording pen and cam for each controlled variable. Cams can rotate at the same or different speeds, over a range from ½ hour to 24 hours per revolution.

Either electric or pneumatic control can be provided. The controller can operate signals at critical points in the cycle, and will automatically shut off the kettles at the end of the program.

Cams are readily cut to the desired contour on calibrated discs of clear plastic, through which the process record is readily visible at all times. Changing cams or chart does not interrupt control.

Our local engineering representative will gladly discuss how you can get better control in less space and at lower cost with this versatile instrument. Call him today . . . he's as near as your phone.

MINNEAPOLIS-HONEYWELL REGULATOR CO., *Industrial Division*, 4509 Wayne Ave., Philadelphia 44, Pa.

● **REFERENCE DATA: Write for Catalog 6020, "Cam Programmer Thermometers."**

MINNEAPOLIS
Honeywell
BROWN INSTRUMENTS
First in Controls

FIBER PPG GLASS

High quality yarns made with emphasis on diameter uniformity

IN THE NATION'S newest fiber glass plant, Pittsburgh's technical staff has developed a system for controlling fiber diameters to extremely close tolerances. This uniformity, throughout each package, and in package after package, is an important factor in maintaining your standards in weaving fiber glass cloth.

We urge you to test the quality and uniformity of Pittsburgh Fiber Glass. Arrangements may be made through any of our offices. Pittsburgh Plate Glass Company, 420 Fort Duquesne Boulevard, Pittsburgh 22, Pa. District Sales Offices: Chicago, Cincinnati, Cleveland, Detroit, New York, Washington.

Packaged for all Textile Equipment

Pittsburgh Fiber Glass continuous filament textile yarns are made in standard 150's, 225's, 450's and 900's, twisted and plied to give any desired build-up, including light cordings and packaged to meet the requirements of all standard textile machinery.

FIBER PPG GLASS

PAINTS • GLASS • CHEMICALS • BRUSHES • PLASTICS

PITTSBURGH PLATE GLASS COMPANY

For more information, write direct or use Reader Service post card.

Only SEALMASTER Gives You Positive Locking Plus Easy Shaft Mounting

SEALMASTER BEARINGS now provide the first practical answer to positive shaft locking with easy shaft mounting. Just slip the bearing onto the shaft . . . tighten two set screws . . . that's all. This is made possible through ZONE HARDENING.*

SEALMASTER BALL BEARING UNITS

Cartridge Unit

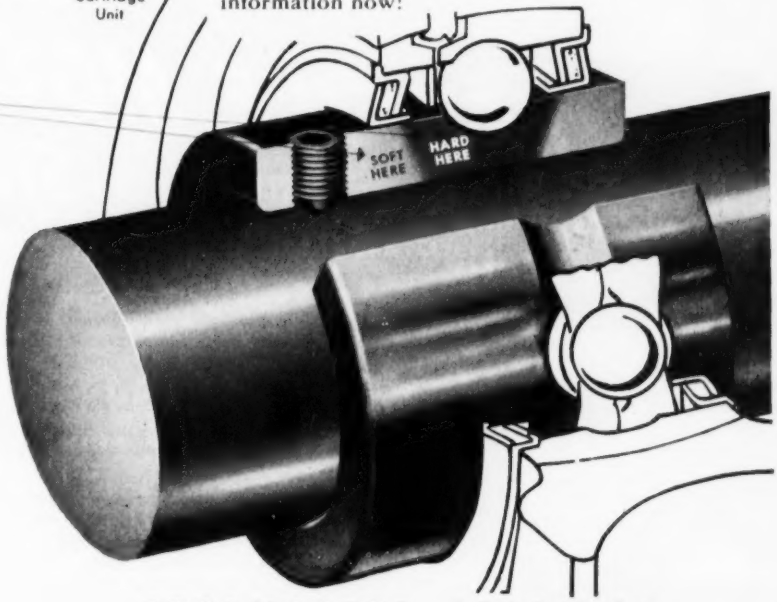
Flange Unit

Take-Up Unit

Flange-Cartridge Unit

With Zone Hardening, the inner race of the bearing is hardened through the ball path section only. The rest of the race is left in its original, metallurgically soft state. The threads of the hardened set-screws bind firmly in this softer portion of the race and cannot work loose. This insures positive race-to-shaft locking for the life of the bearing.

In the machines you design, build or use, SEALMASTER Zone Hardening means better bearing performance, less maintenance and replacement costs. Write for full information now!



*ZONE HARDENING

is a completely automatic heat treating process with timing controlled *to the tenth of a second.* In addition to enabling positive race-to-shaft locking, it provides a finer grained, metallurgical structure of uniform hardness in the ball path section. This gives better load carrying ability. Zone Hardening is patented . . . only SEALMASTERS have it.

SEALMASTER BEARINGS

A DIVISION OF STEPHENS-ADAMSON MFG. COMPANY
14 RIDGEWAY AVENUE, AURORA, ILLINOIS

FACTORY REPRESENTATIVES AND DEALERS IN ALL PRINCIPAL CITIES

For more information, write direct or use Reader Service post card.

Cast-iron end brackets help maintain alignment, assure smooth, quiet starting and running.
Rotor assembly with ball bearings in place. Large fans assure adequate ventilation.
Strong, rigid cast iron frame, smooth contours permit free circulation of air.
Century's

Century Textile motors are ruggedly built for long service life.

TEXTILE MOTOR SHEDS LINT

-796

- STREAMLINE DESIGN
- COOLING AIR FLOW

Smooth clean air passages permit cooling air to enter the motor through the end brackets. This steady blast of air circulates near the bearings, around the windings and out through the adequate air passages in the frame.

Lint and textile dust pass through the motor readily, without clogging. This results in clean radiation surfaces, which means that the motor operates at normal temperature.

Century Ball Bearing Textile Motors are lubricated at the factory for the life of the lubricant — under normal service, this is several years without re-lubrication.

However, evaporation or oxidation due to high temperature determines the ultimate life of the lubricant. Century construction permits re-lubrication, when required, without dismantling.

In addition to textile motors, Century builds a complete line of electric motors in sizes from ⅛ to 400 horsepower. They are available in open rated drip proof, splash proof, enclosed fan cooled and explosion proof frames to meet any atmospheric hazard.

For complete information, including dimensions and prices, write today.

Century C MOTORS

CENTURY ELECTRIC COMPANY

1806 PINE STREET, ST. LOUIS 3, MISSOURI • OFFICES AND STOCK POINTS IN PRINCIPAL CITIES

STOCK DYEING MACHINE
can be the starting point of surface treatment to produce better quality yarns. By adding Avisco textile chemicals at the dyeing machine, the dyed staple is simultaneously lubricated, softened, and treated to control static. Carding qualities are improved. Fibers have better cohesion, and produce a nep-free and splinter-free web that helps make a stronger, more uniform yarn.

Make better yarn from dyed stock— with AVISCO textile chemicals

Write for your copy of this new booklet— "Avisco Textile Chemicals"

Avisco textile chemicals were developed in cooperation with and are manufactured by the Atlas Powder Company, Wilmington, Delaware

Much of the quality of a fiber depends on its surface. For the best surface characteristics, treat your stock with Avisco textile chemicals— a versatile group of materials engineered to lubricate, control static and soften, all at the same time. Because they're 100% active, these chemicals do a superior job in small dosages. And they won't discolor, turn rancid, or wick out.

Many different types of Avisco chemicals are available for use with all fibers, natural and man-made . . . for processing fiber, yarn or fabric. Complete technical assistance by Avisco specialists helps you in the selection of the best materials and techniques for your own application. Write to Textile Chemicals Division, P.O. Box 455, Marcus Hook, Pa.; or Textile Chemicals Sales, 1617 Pennsylvania Blvd., Philadelphia, Pa.

Avisco

AMERICAN VISCOSE CORPORATION

America's first producer of man-made fibers

First...a good recipe

A special steel formula, superior tempering, Textile's rigid scientific controls, automatic and electronic . . . Result: needles that can stand-up under today's high-speed knitting operations. The superior performance of Textile Spring-Beard Needles is a result of a good recipe . . . mixed with precision . . . tested for perfection.

When you use Textile Spring-Beard Needles you'll see the results in better fabrics and increased profits.

TEXTILE MACHINE WORKS, READING, PENNA.

Textile

SPRING-BEARD NEEDLES

For Full-Fashioned Knitting
For Tricot Knitting

ARROW / **Latch Needles**

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One Sure Way to Get MORE DEFENSE FOR LESS MONEY

How can we get more national defense for less money? The best answer yet given to this question appears in a little-noticed section of the new defense budget. That answer, with which this editorial is concerned, is to provide more equipment with which to step up munitions production in an emergency. Thus we can eliminate much of the need to stockpile finished munitions in advance.

The new defense budget provides an appropriation of $500 million, to be invested by the Secretary of Defense in specialized facilities required to produce munitions on a wartime scale, but not adapted to profitable operation by private industry in normal times. Facilities of this type are known as "stand-by capacity."

There is no strictly political controversy over the "stand-by capacity" program. It was originally suggested by Clay Bedford, Special Assistant to the Secretary of Defense during the Truman administration. It has since been reviewed and endorsed by the Eisenhower administration. Moreover, it involves little or no technical controversy. Civilian and military experts are well agreed that the only alternative to enormous expenditures for stockpiling military equipment is to provide enough facilities for producing it quickly in an emergency.

Here is the Key Idea

In his speech of May 19, introducing his defense budget to Congress and the nation, President Eisenhower stressed the value of such reserve capacity in these terms, ***"The more swiftly and smoothly we can mobilize, the less our dependence upon costly standing armies and navies."***

In accord with this idea, the $500 million requested for the present reserve capacity program would be invested in tools that require a long time to produce, and so present grave complications in an emergency unless they are ready in advance. Some such tools would be installed in new plants that are needed to eliminate potential bottlenecks in the defense production program. Others would be ordered to replace that part of the government's present machine-tool inventory which is made obsolete by changes in the design of defense products. By completely "tooling up" with the most modern equipment, the admin-

istration hopes to realize a production potential many times greater than could be achieved by spending the same amount of money on military end-products.

Examples of Savings

In the specialized field of defense production, adequate modern capacity is the key to both economy and speedy delivery in a pinch. Here are some striking examples from the recent report of the Advisory Committee on Production Equipment (Vance Committee) to the Director of Defense Mobilization:*

—In the case of certain ammunition components, the cost of new capacity can be recovered in only six weeks of full production.

—If $500 million worth of special tools needed to make aircraft are purchased in advance, aircraft production during the first two years of war will be increased about $18 billion. In other words, it costs 1/36 as much to acquire the tools in advance as to acquire the aircraft.

—In the case of a certain ordnance item, an expenditure equal to the cost of only 150 units of the item will provide the capacity to produce thousands and save three years' time in meeting mobilization requirements.

Moreover, reserve plants and equipment can be kept up-to-date at only a small fraction of the cost required to maintain an up-to-date reserve of military end-products. The cost of replacing 5,000 obsolete tanks is at least $1 billion. The cost of new tools for a tank plant would be less than 10% of that amount.

*This Committee, headed by Mr. Harold Vance, President of the Studebaker Corporation, included Clay Bedford, then President of Chase Aircraft, Manly Fleischman, former Defense Production Administrator, and several retired military leaders with wide experience in procurement.

Savings Will Multiply

On the basis of facts like these, the Vance Committee recommended that the Defense Department spend $500 million to $800 million per year on specialized defense production facilities in order to provide substantial reserve capacity as soon as possible. It also recommended that expenditures for military end-products which get obsolete rapidly be held to a minimum. The Eisenhower administration has adopted this approach to the problem of munitions production in asking that $500 million be invested in reserve capacity.

The importance of this approach is much greater than is indicated by the amount of money to be spent on new tools, although this amount will go far toward assuring a healthy machine tool industry, adequate to meet emergency demands. ***What is really important is the great saving that can eventually be made in the cost of our defense program by a modern tooling program.*** If we are to maintain this program for a long period, and if we are to pay as we go, we must have a low-cost program. No other plan to reduce and control the cost of a garrison economy can compare with the new approach suggested in the Vance Report and now embodied in the new defense budget.

Congressmen will do well to scrutinize all military appropriations carefully. They have a chronic tendency to be too big. But there should be no penny-pinching on investments in capital equipment that will pay out in as short a time as six weeks in a war emergency. It would be tragic if this opportunity for real economy were lost in the controversy over other aspects of the defense program. ***The tooling program is a key part of the Eisenhower effort to cut defense costs. It should be promptly approved.***

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TEXTILE WORLD'S WOOL SYSTEMS FLOW CHART

THERE HAVE BEEN drastic changes in the woolen and worsted branches of the textile industry in the last six years. TEXTILE WORLD'S first wool flow chart, which was published in 1947, reflected practices widely used at that time but included nothing about synthetics, blends, pin drafters, warp-tying machines, or many of the other major advances that have come along since that time.

This new chart broadly covers all phases of processing on woolen and worsted equipment. Where there is a choice of omitting a process or putting it in, we have leaned toward putting it in.

Variations, short-cut methods, and personal opinion all run rampant in this branch of the industry; so the outline shown here could not possibly reflect the practices in every mill. The chart shows what is considered normal or widely accepted practice, and the tendency is to show all possible processes rather than tailor-made short cuts.

And we've tried to show all the places where blending with synthetic fibers normally occurs, in addition to the preliminary processes required to put the synthetic fibers in the proper form.

In many cases we've had to reach a compromise. The experts who helped us prepare the chart were very cooperative in an effort to produce a flow chart that represents current practice as closely as possible. —JAMES H. KENNEDY.

Legend

→ **Black lines show usual flow of materials**

→ **Gray lines show alternate or optional flow**

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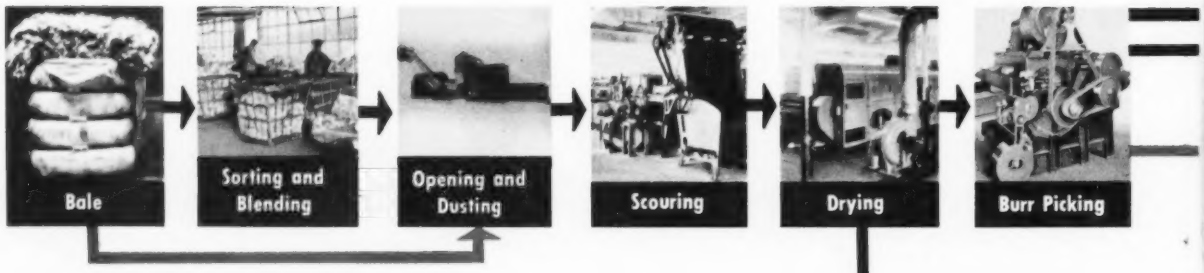
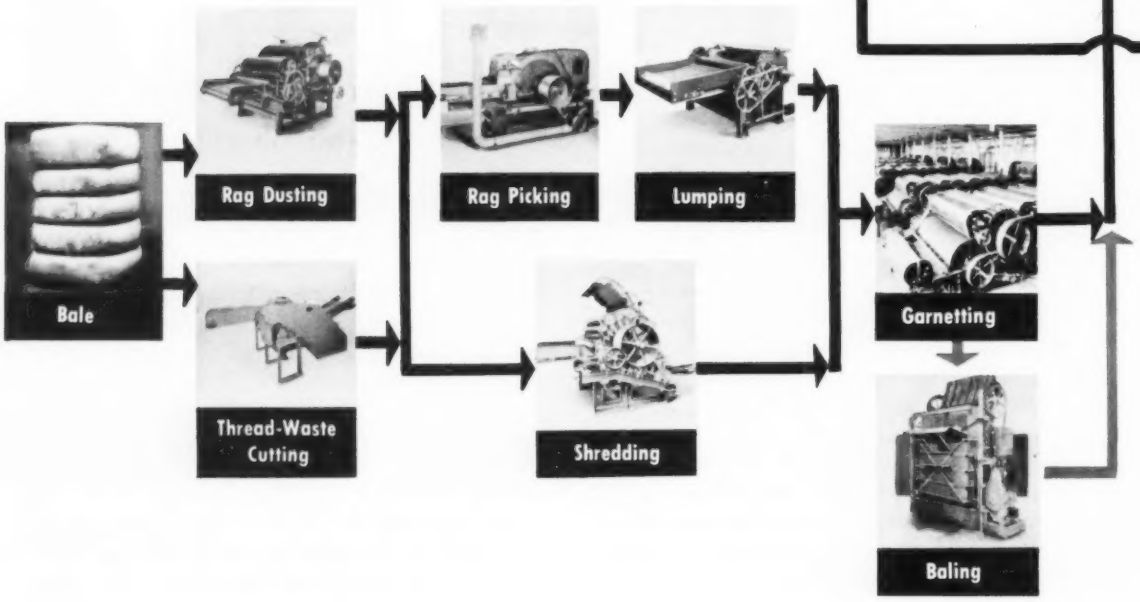
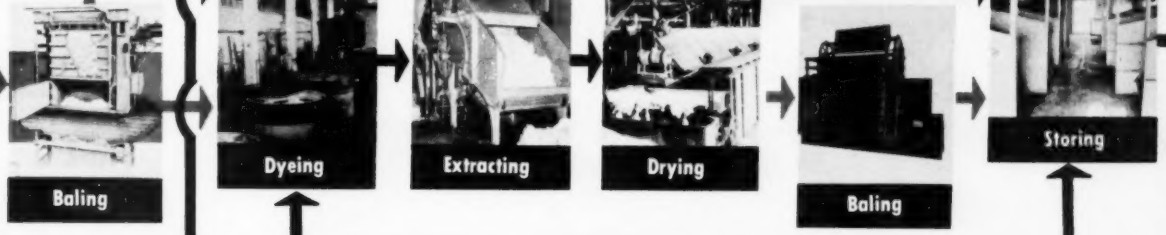
Scouring



Waste Reclamation

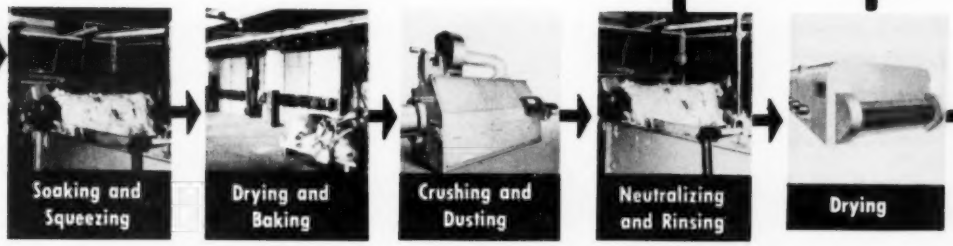


Stock Dyeing

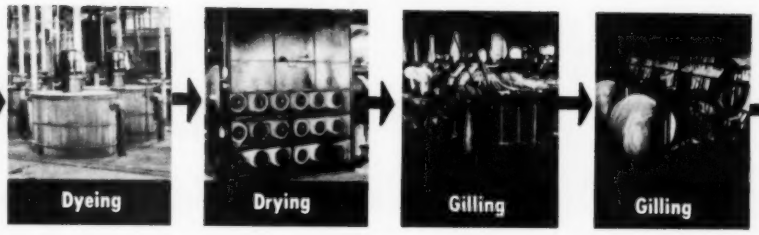


To Woolen System

Stock Carbonizing



Top Dyeing



To Worsted Drawing and Spinning

From Top Making

Woolen System

ng Picking

Blending and Oiling

Breaker Carding

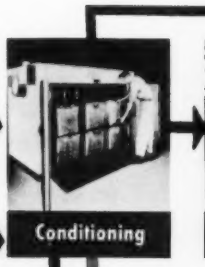
Intermediate Carding

Crushing

Finisher Carding and Condensing

Ring Spinning

Mule Spinning


Conditioning

Worsted Drawing and Spinning

Drawing

Drafting or Reducing

Pin Drafting or Gill Reducing

Long-Draft Roving

Long-Draft Spinning

Ring Roving

Ring Spinnin

Cone Roving

Cap Spinnin

n-Spindle Gilling

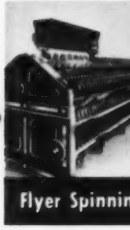
Heavy Drawing

Weigh Drawing

Flyer Reducing

Ring Reducing

Flyer Roving


Flyer Spinnin

ersecting Gilling

Intersecting Gilling

Intersect'g Gilling with Rub Aprons

Open Gilling with Rub Aprons

Porcupine Finishing

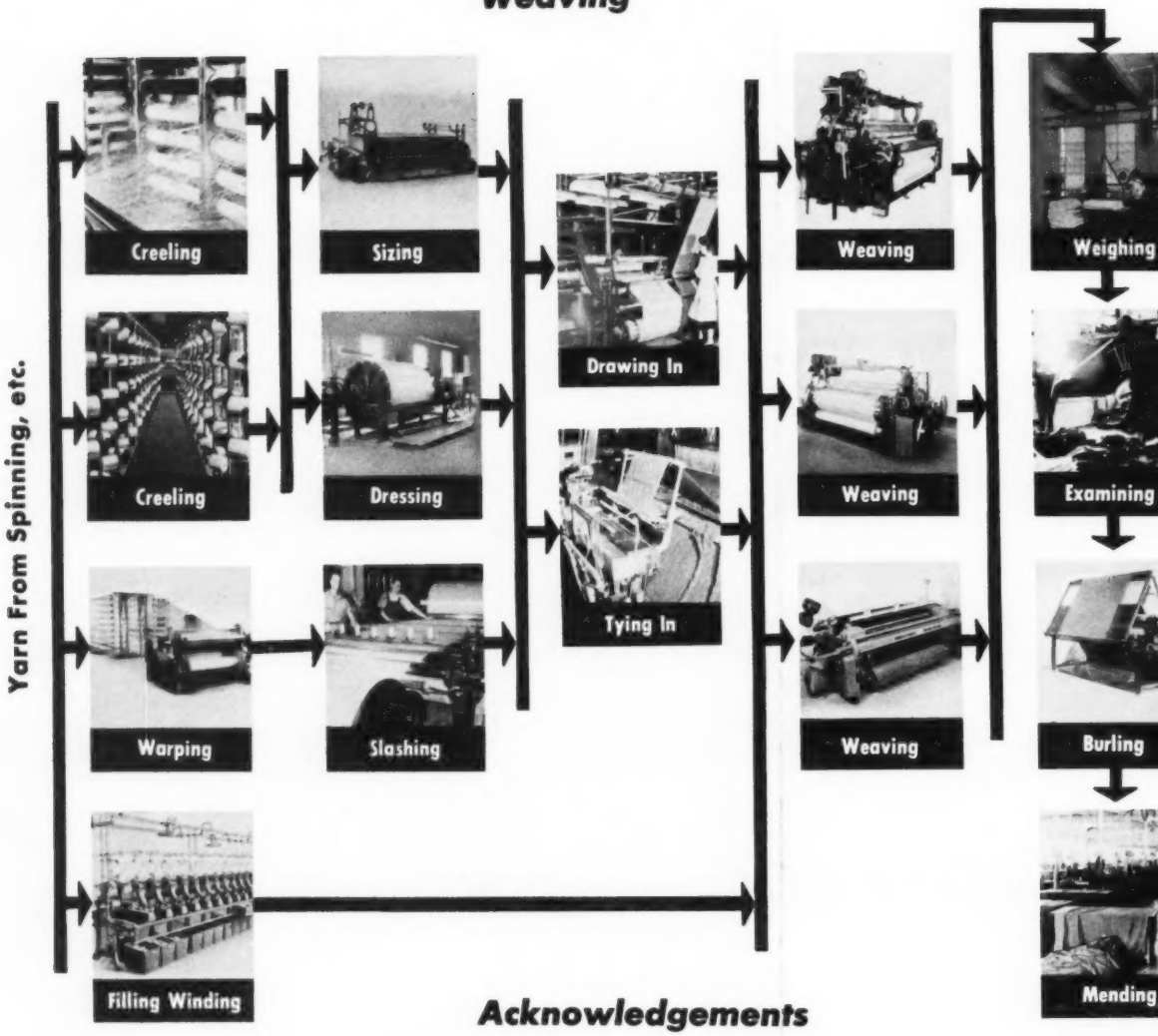
Porcupine Finishing

Superdraft Porcupine Finishing

System

Conditioning
Winding
Twisting
Conditioning
Winding and Spooling
Skein Dyeing
Skeining
Dyeing
Extracting
Drying
Package Dyeing
Winding
Dyeing
Extracting
Drying
Ring Spinning
Cap Spinning
Flyer Spinning
Ring Spinning
Conditioning
Twisting
Cone Winding
Superdraft Porcupine Finishing
Mule Spinning
Winding
To Weaving and Knitting
(For Knitting see Flow Chart, TEXTILE WORLD, April, 1947)

Weaving

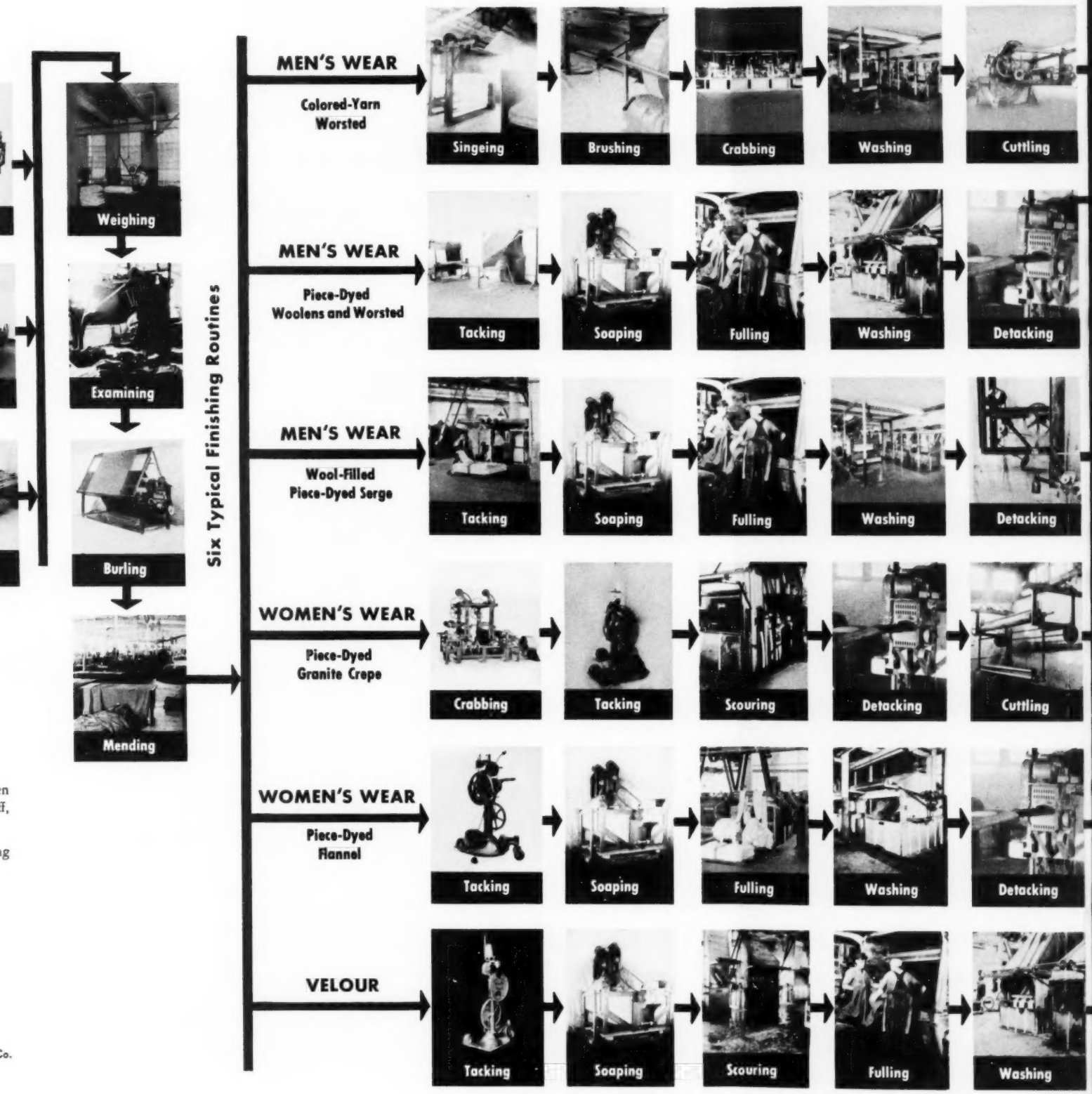


Acknowledgements

Expert advice and assistance in compiling this chart were given TEXTILE WORLD's staff by Prof. James H. Kennedy, Jr., and his staff, Textile Manufacturing Div., Lowell Technological Institute.

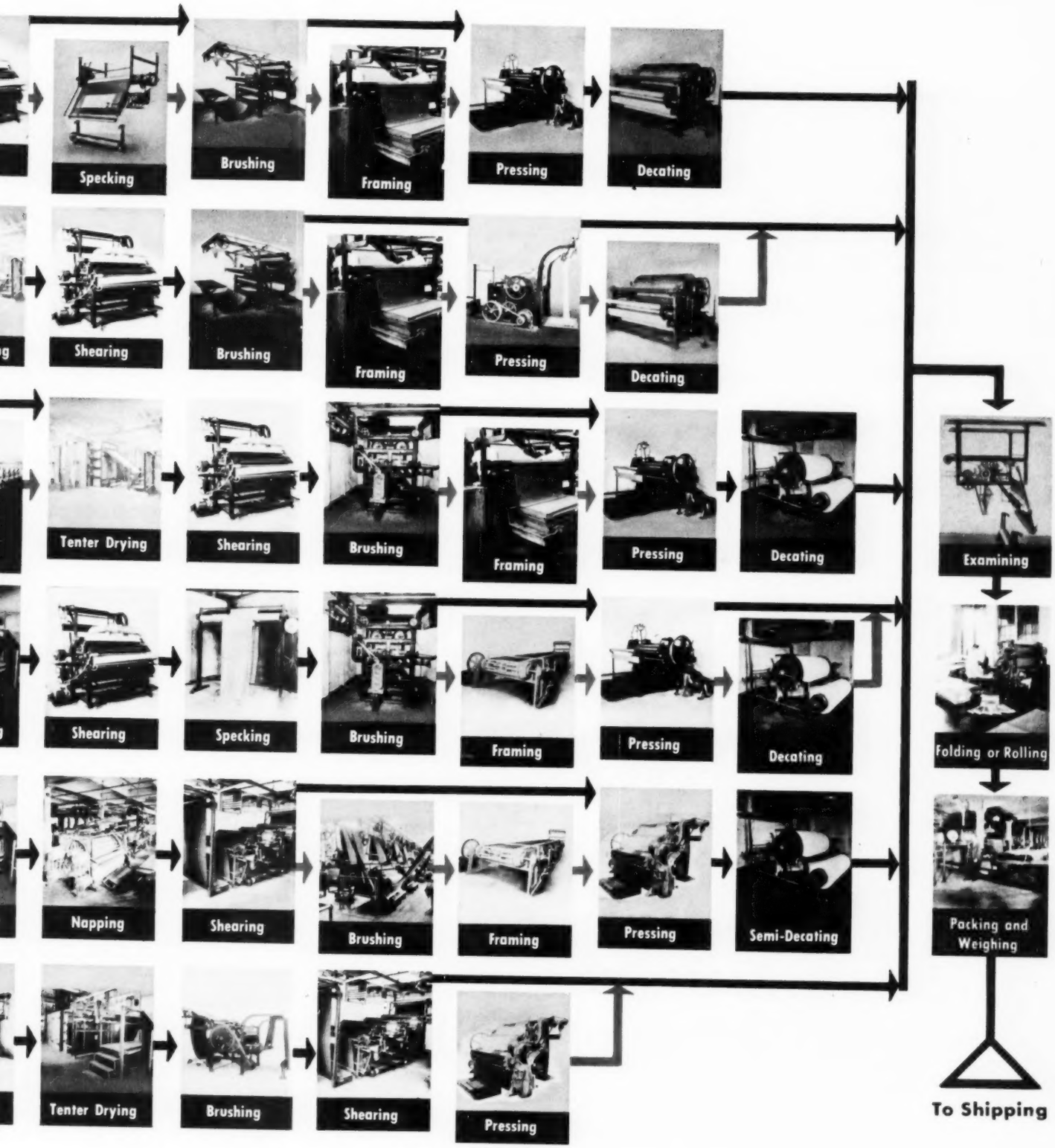
The following companies were also very helpful in furnishing pictures and bringing the chart up to date:

Abbott Machine Co., Inc.
American Viscose Corp.
Arlington Machine Works, Inc.
Atkinson, Haserick & Co.
Barber-Colman Co.
Cocker Machine & Foundry Co.
Curtis & Marble Machine Co.
Davis & Furber Machine Co.
The Dinsmore Mfg. Co.
Draper Corp.
E. I. du Pont de Nemours & Co., Inc.
Ernest L. Frankl Associates
Rodney Hunt Machine Co.
James Hunter Machine Co.
The Industrial Dryer Corp.
Parks & Woolson Machine Co.
Proctor & Schwartz, Inc.
Riggs & Lombard, Inc.
Robert Reiner, Inc.
Saco-Lowell Shops
C. G. Sargent's Sons Corp.
James Smith & Son, Inc.
Stellite American Corp.
Universal Winding Co.
The Warner & Swasey Co.
Whitin Machine Works
The Woonsocket Napping Machinery Co.


Weighing
Examining
Burling
Mending
Six Typical Finishing Routines
MEN'S WEAR
Colored-Yarn Worsted
Singeing
Brushing
Crabbing
Washing
Cuttling
MEN'S WEAR
Piece-Dyed Woolens and Worsted
Tacking
Soaping
Fulling
Washing
Detacking
MEN'S WEAR
Wool-Filled Piece-Dyed Serge
Tacking
Soaping
Fulling
Washing
Detacking
WOMEN'S WEAR
Piece-Dyed Granite Crepe
Crabbing
Tacking
Scouring
Detacking
Cuttling
WOMEN'S WEAR
Piece-Dyed Flannel
Tacking
Soaping
Fulling
Washing
Detacking
VELOUR
Tacking
Soaping
Scouring
Fulling
Washing

Finishing

Extracting
Fulling
Washing
Speck Dyeing
Cuttling
Extracting
Tenter Drying
Shearing
Specking
Carbonizing
Dry Milling
Neutralizing
Dyeing
Speck Dyeing
Cuttling
Extracting
Tenter Drying
Shearing
Extracting
Carbonizing
Dry Milling
Neutralizing
Dyeing
Cuttling
Extracting
Crabbing
Tenter Drying
Extracting
Carbonizing
Neutralizing
Crabbing
Dyeing
Cuttling
Extracting
Tenter Drying
Shearing
Cuttling
Extracting
Carbonizing
Neutralizing
Dyeing
Cuttling
Extracting
Tenter Drying
Napping
Detacking
Carbonizing and Crushing
Neutralizing
Dyeing
Steaming
Cuttling
Extracting
Gigging
Tenter Drying


Specking
Brushing
Framing
Pressing
Decating
Shearing
Brushing
Framing
Pressing
Decating
Tenter Drying
Shearing
Brushing
Framing
Pressing
Decating
Examining
Shearing
Specking
Brushing
Framing
Pressing
Decating
Folding or Rolling
Napping
Shearing
Brushing
Framing
Pressing
Semi-Decating
Packing and Weighing
Tenter Drying
Brushing
Shearing
Pressing
To Shipping

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TEXTILE WORLD, AUGUST, 1953 Pages 89-100

PLANNED INTERVIEWING
Gives More Information in Less Time

▶ You get more information if you let the job applicant do the talking. This patterned interviewing technique provides information on abilities, possibilities, and personality by a planned exploration of:

- **Previous working experience**
- **Education and special training**
- **Family background**

By FLORENCE LASLIE, National Carbon Co.

THE FINAL MEASURE of an interviewing technique is the productivity of the workers, the rate of turnover and absenteeism, and the soundness of management-worker relations. The patterned interview was developed to keep the applicant and the interviewer on the track, and it enables the interviewer to get more information in less time.

The particular pattern followed by interviewers at National Carbon Co. was devised by Psychological Corp., New York, N. Y. It is a "master of ceremonies" technique consisting of several lead questions that require a minimum of conversation from the interviewer and a maximum from the applicant. It explores three areas in planned sequence:

1. Previous working experience
2. Education and special training
3. Family background

An interview that starts and stops at no particular point, that rambles and gallops out of control, is futile. In this kind of interview, the questions smack strongly of cross-examination and are embarrassing to both the applicant and the interviewer. An example of poor planning is an interview a young girl went through when she applied for a position as secretary. Unknown to her, her interviewer had just lost a secretary because of an anticipated increase in her family; so he was anxious to avoid a similar replacement. He opened the interview by asking, "Young lady, are you pregnant?" This was especially embarrassing to the young lady because she wasn't even married.

Based on a paper presented at the Southeastern Personnel Conference.

Each Area Contributes Some Useful Information

The three areas of our patterned interview are explored in sequence to discuss impersonal matters first and then to work down to the more personal history after the interviewer has gained the confidence of the applicant.

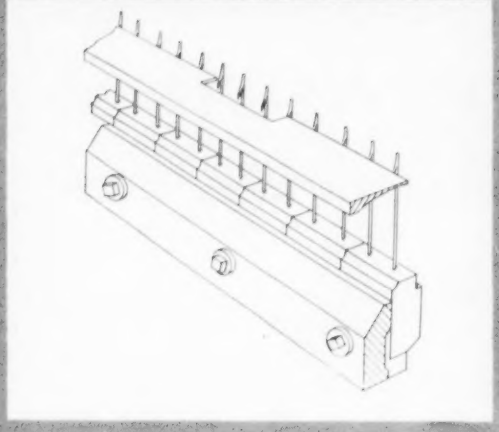
From the exploration of previous working experience, we learn about the applicant's probable job performance and job stability. From his education and training, we learn about his potential for upgrading, his interests, and something about his general personality traits. From his family background, we learn about his emotional stability, maturity, adaptability, and other traits that have a direct bearing on job performance. Through good interviewing techniques, we can recognize the neurotic, the shiftless, and those who are unable to work in harmony with others.

When the applicant comes in for the interview, put him at ease and make him feel that he is not going to be cross-examined. Make him feel that you are interested in him as an individual. The entire interview should be carried on in a conversational manner and should not appear to be hurried.

The lead questions tell the applicant the purpose of the question and should be so phrased that it is impossible for him to answer simply Yes or No; a question that can be answered Yes or No is better left unasked.

The first lead question that is asked in our interview is: "We feel that the more we can learn about you as a person applying for work with us, the more able we and you will be to decide whether or not our type of work will make the best use of your abilities. When a person is placed on a job that uses his abilities, he will naturally make progress, eventually earn more money, and be a useful employee. For this reason, I would like for you to tell me about your previous working experience, your education and training, and something about your early childhood. Suppose you start with the first job you ever had

(*Continued on page 232*)



SOLID PORTION of a 5x3 cut presser closes five needle beards and mispresses three beards.

PLAIN PRESSER is held out of action while the cut presser is in operation.

Cut Pressers Can Increase Your Range of TRICOT DESIGNS

- **Many new types of tricot fabrics—with characteristics much different from plain tricot—can be made by mispressing certain needles**
- **Special machines with shogging pressers or two pressers are used**

By J. B. LANCASHIRE, Leicester College of Technology

As the demand for novelty tricot fabrics grows, the tricot knitter is searching for new ideas. The cut-presser machine extends the scope of the tricot machine, and an unlimited range of patterns is opened up when these machines are fitted with three guide bars.

The four typical cut-presser fabrics that are described here are made with (1) one cut-presser bar and one guide bar; (2) two guide bars and one cut presser; (3) two guide bars, a plain presser, and a cut presser; (4) three guide bars, a plain presser, and a cut presser.

What Is a Cut Presser?

A cut presser is used on a spring-needle warp-knitting machine whenever some beards are required to be closed and not others. The working edge of the presser is cut away where the beards are required to be left open. When the needles are drawn down, the old loops slide under the open beards that are opposite the cutaway part of the presser edge, and a stitch similar to a held stitch in circular-knitted fabrics is formed.

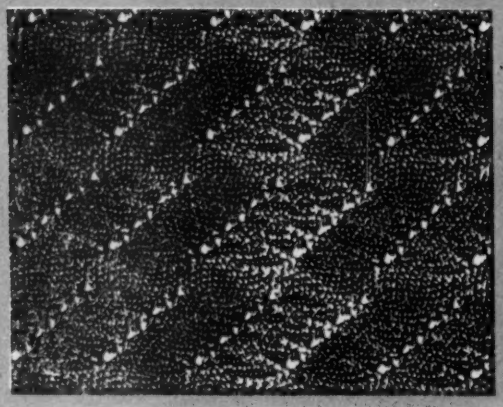
It is customary to define the presser in terms of the widths of solid and cutaway parts, measured in needle spacings. The width of the solid part is specified first: a presser having a solid part wide enough to act on six needles alternating with a cutaway part that causes four needles to mispress is referred to as a 6x4 presser. The edge can be cut by means of circular saws to suit any gauge of machine in any combination of cuts.

Two Ways To Use Cut Pressers

Two methods are in common use to cause the needles to be successively pressed and mispressed. One method uses one cut presser that is shogged sideways, in a manner similar to the guide-bar movement, by a pattern chain. This presser can be moved one needle space at a time or it can jump several needles.

The other method, which employs the same principle, uses a plain presser in addition to the cut presser. The cut presser is put into action at every course, whether the plain presser is in action or not. The plain presser must be taken out of action at intervals so that the cut presser can do its work. The cam follower of the plain-presser lever is moved away from the presser cam onto an inoperative cam, or the cam is moved along a keyway on the shaft. This action imparts no forward movement to the solid presser.

(*Continued on page 192*)



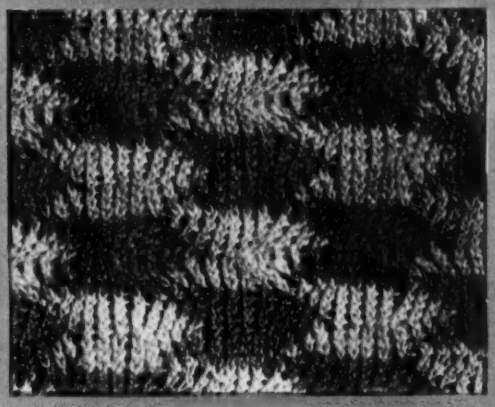
SINGLE-BAR CUT-PRESSER FABRIC is made with this setup:

Threading up:
XGXG . . . . XXXX . . . . XBXB . . . . XXXX . . . . XBXR . . . . XXXX . . . .
X = Brown B = Blue G = Green R = Red

Cut presser: 4x4

Pattern wheel: 11-12, 10-11, 9-10, 8-9, 7-8, 6-7, 5-6, 4-5, 3-4, 2-3, 1-2, 1-0, 2-1, 3-2, 4-3, 5-4, 5-6, 4-5, 3-4, 3-2, 4-3, 5-4, 6-5, 7-6, 7-8, 6-7, 5-6, 5-4, 6-5, 7-6, 8-7, 9-8, 9-10, 8-9, 7-8, 7-6, 8-7, 9-8, 10-9, 11-10

Cut presser: 11-11, 10-10, 9-9, 8-8, 7-7, 6-6, 5-5, 4-4, 3-3, 2-2, 1-1, 0-0, 1-1, 2-2, 3-3, 4-4, 5-5, 4-4, 3-3, 2-2, 3-3, 4-4, 5-5, 6-6, 7-7, 6-6, 5-5, 4-4, 5-5, 6-6, 7-7, 8-8, 9-9, 8-8, 7-7, 6-6, 7-7, 8-8, 9-9, 10-10



THREE-COLOR FABRIC is made on two bars with one cut presser.

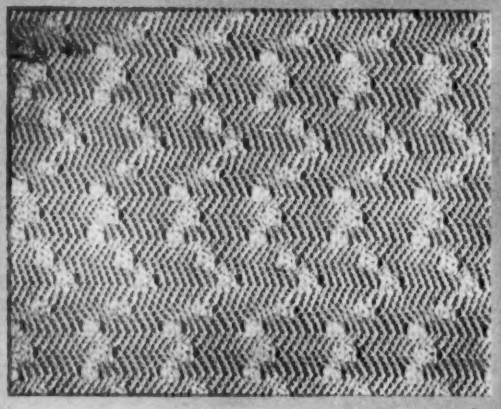
Threading up:
Back guide bar GGGG . . . . Y Y Y Y . . . .
Front guide bar . Y Y Y Y . . . . R R R R . . .
G = Green Y = Yellow R = Red o = Empty guide

Cut presser: 4x4

Front pattern wheel: 1-1, 1-1, 1-1, 1-1, 1-1, 1-1, 1-1, 1-1, 1-1, 1-1, 1-1, 1-1, 1-1, 1-1, 1-1, 1-1, 1-0, 2-1, 3-2, 4-3, 5-4, 6-5, 7-6, 8-7, 8-9, 7-8, 6-7, 5-6, 4-5, 3-4, 2-3, 1-0

Back pattern wheel: 1-0, 2-1, 3-2, 4-3, 5-4, 6-5, 7-6, 8-7, 8-9, 7-8, 6-7, 5-6, 4-5, 3-4, 2-3, 1-0, 1-1, 2-2, 3-3, 4-4, 5-5, 6-6, 8-8, 9-9, 6-6, 5-5, 4-4, 3-3, 2-2, 1-1, 0-0, 1-1

Cut presser: 0-0, 1-1, 2-2, 3-3, 4-4, 5-5, 6-6, 7-7, 8-8, 7-7, 6-6, 5-5, 4-4, 3-3, 2-2, 1-1, 0-0, 1-1, 2-2, 3-3, 4-4, 5-5, 6-6, 7-7, 8-8, 7-7, 6-6, 5-5, 4-4, 3-3, 2-2, 1-1



KNOP EFFECT is produced with two guide bars, a plain presser, and a cut presser.

Threading up:
Back bar—full
Front bar—2 in 8 out

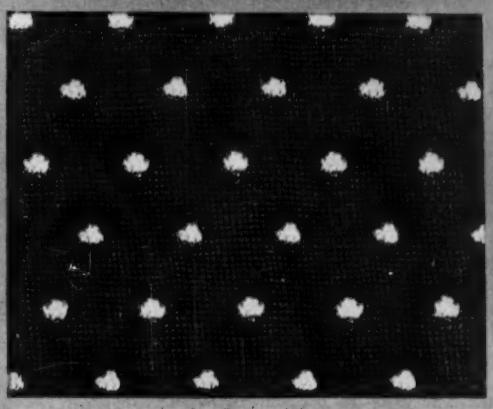
Cut presser: 2x8

Front pattern wheel: 1-0, 1-2, 1-0, 1-2, 2-2, 2-2, 2-2, 2-2, 2-3, 3-4, 3-2, 3-4, 4-4, 5-6, 6-6, 7-7, 7-8, 8-9, 8-7, 8-9, 8-8, 7-7, 6-6, 5-5, 5-4, 5-6, 5-4, 5-6, 6-6, 7-7, 7-7, 7-7, 7-8, 8-9, 8-7, 8-9, 8-8, 6-6, 5-5, 4-4, 3-2, 3-4, 3-2, 3-4, 3-3, 2-2, 2-2, 1-1

Back pattern wheel: 4-4, 5-5, 4-4, 5-5, 3-4, 2-3, 1-2, 1-0, 1-1, 2-2, 1-1, 2-2, 2-1, 3-2, 4-3, 4-5, 4-4, 5-5, 4-4, 5-5, 3-4, 3-2, 4-3, 4-5, 4-4, 5-5, 3-3, 4-4, 2-1, 3-2, 4-3, 4-5, 4-4, 5-5, 4-4, 5-5, 3-4, 2-3, 1-2, 1-0, 0-0, 1-1, 0-0, 1-1, 2-1, 3-2, 4-3, 4-5

Plain presser: 4-0, 0-0, 0-0, 0-0, 4-8, 8-8, 8-8, 8-8, 8-8, 4-0, 0-0, 0-0, 0-0, 4-8, 8-8, 8-8, 8-8, 4-0, 0-0, 0-0, 0-0, 4-8, 8-8, 8-8, 8-8

Cut presser: 0-0, 1-1, 0-0, 1-1, 1-1, 1-1, 1-1, 1-1, 1-1, 2-2, 3-3, 2-2, 3-3, 4-4, 5-5, 6-6, 7-7, 7-7, 8-8, 7-7, 8-8, 7-7, 6-6, 5-5, 4-4, 4-4, 5-5, 4-4, 5-5, 5-5, 5-5, 6-6, 6-6, 7-7, 8-8, 7-7, 8-8, 6-6, 5-5, 4-4, 3-3, 2-2, 3-3, 2-2, 3-3, 3-3, 2-2, 1-1, 0-0



WHITE SPOT on colored background is made on a three-bar machine with a plain presser and a cut presser.

Threading up:
Back bar B B B B B B B B B B B B B B B B
Middle bar W W . . . . . .
Front bar B B B B B B B B B B B B B B B B
B = Blue W = White o = Empty guide

Cut presser: 2x14

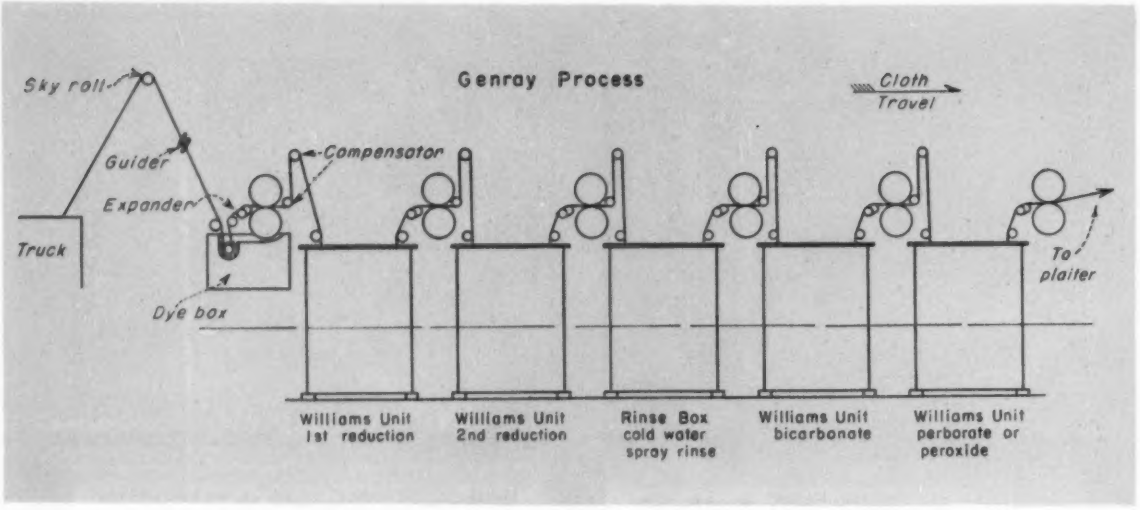
Front pattern wheel: 2-3, 1-0, 2-3, 1-0, 2-3, 1-0, 2-3, 1-0, 2-3, 1-0, 2-3, 1-0, 1-1, 1-1, 1-1, 1-1, 2-3, 1-0, 2-3, 1-0, 2-3, 1-0, 2-3, 1-0, 2-3, 1-0, 1-1, 1-1, 1-1, 1-1

Middle pattern wheel: 9-9, 9-9, 8-8, 8-8, 7-7, 7-7, 6-6, 6-6, 5-5, 5-5, 4-4, 4-4, 2-1, 1-0, 1-2, 1-0, 1-0, 3-3, 3-3, 4-4, 4-4, 5-5, 5-5, 6-6, 6-6, 7-7, 7-7, 8-8, 8-9, 9-10, 9-8, 9-10

Back pattern wheel: 1-0, 1-2, 1-0, 1-2, 1-0, 1-2, 1-0, 1-2, 1-0, 1-2, 1-0, 1-2, 1-1, 0-0, 1-1, 0-0, 1-0, 1-2, 1-0, 1-2, 1-0, 1-2, 1-0, 1-2, 1-0, 1-2, 1-1, 2-2, 1-1, 2-2

Plain presser: 4-8, 8-8, 8-8, 8-8, 8-8, 8-8, 8-8, 8-8, 8-8, 8-8, 8-8, 8-8, 4-0, 0-0, 0-0, 0-0

Cut pressers: 9-9, 8-8, 8-8, 7-7, 6-6, 5-5, 5-5, 4-4, 3-3, 2-2, 1-1, 1-1, 1-1, 1-1, 0-0, 1-1, 0-0, 0-0, 1-1, 2-2, 3-3, 4-4, 5-5, 5-5, 6-6, 7-7, 8-8, 8-8, 8-8, 8-8, 9-9, 8-8, 9-9



Genray Process for Rayon Gives Level VAT DYEINGS, Better Penetration

• Bradford Dyeing Assn., U.S.A., Westerly, R. I., is using a new, low-speed, controlled method for dyeing vats on spun-rayon piece goods.

• The process gives uniformity within the lot and from batch to batch.

By **GEORGE M. MOISSON,** Assistant Editor, TEXTILE WORLD

DYEING OF PIGMENT-PADDED vat colors on rayon piece goods has always been a problem. Continuous padding, reduction, rinsing, oxidation, and washing very seldom could be depended on for even, well-penetrated goods. The best-quality work in the past has always been delivered by jigs; even then batch-to-batch matching of shades was nothing to be proud of.

Bradford is now using the Genray procedure, developed by General Dyestuff Corp., in which the speed is restricted to between 20 and 40 yds. per min., and the reduction potential is checked and recorded by the Marhen system.

The reason for the reduced speed is to give the leuco (reduced) dyestuff more time to diffuse into the rayon fibers before oxidation takes place. Rayon, of regular cross section, offers less surface than cotton fibers and therefore wets out more slowly than cotton. This slow-wetting characteristic has been the trouble-maker with continuous vat dyeing.

Here's the Setup

As shown in the sketch, the range consists of a pigment pad, two Williams units for reduction, a spray-type rinse box, and two more Williams units for neutralization and oxidation. Ahead of each nip is an expander roll, and after each nip is a set of compensating rolls.

The pad nip is set at 10 tons and the intermediate nips at three tons. Pad formulas are directly transferrable from pad-jig to the Genray system in most cases. Though the Genray method calls for speeds as low as 20 yds. per min., Bradford uses speeds up to 40 yds. per min. with good results.

Dye concentrations up to 25 oz. per gal. are run on the Bradford range with full color yield and little or no wash down.

A Typical Run

Deep brown shade — spun-rayon shantung

Per gallon of pad liquor:

- Indanthrene Black Brown VA Paste—20 (oz.)
- Indanthrene Golden Orange GA Dbl. Paste—1.6
- Indanthrene Brown BRA Paste—3.4
- Pad temperature—150° F.
- Speed—40 yds. per min.

Run wet into two consecutive Williams units at 205° F. Each unit contains (per gal.):

- Caustic soda flakes—3 (oz.)
- Hydrosulfite conc.—3
- Common salt—1 lb.
- Pad liquor—0.03 gal.
- Reduction potential—1,120 millivolts, maintained throughout run.

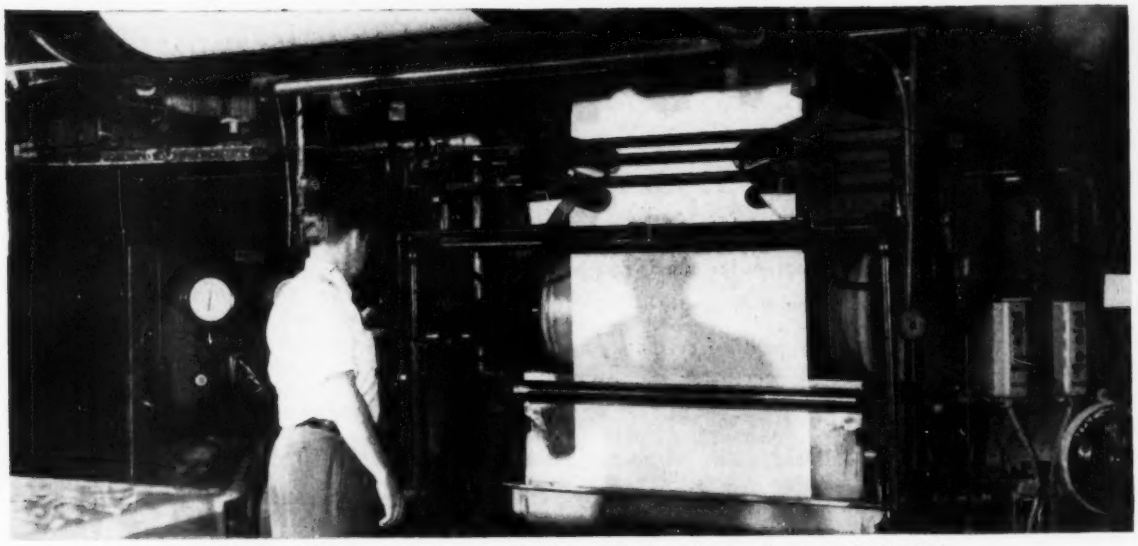
A running cold-water rinse in the third box, bicarbonate in the fourth, and perborate in the fifth complete the cycle.

Economy Is Another Factor

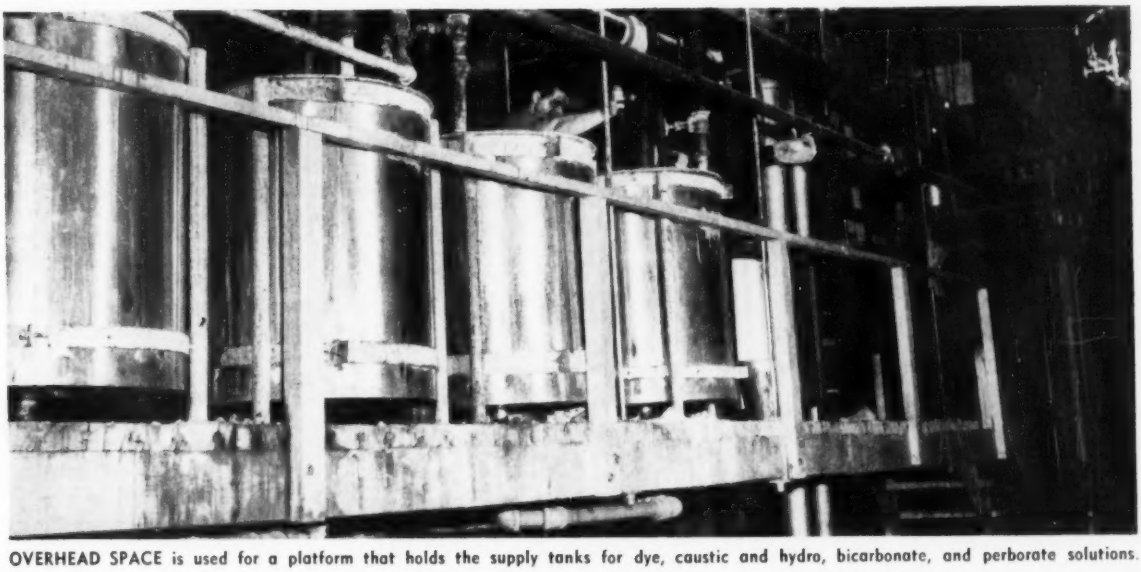
Comparisons of cost and personnel requirements compare favorably for the Genray system against the pad-jig system. Initial cost of essential equipment is said to be about the same.

At 20 yds. per min., the Genray system requires little more time-in-process, but speeds up to 40 yds. per min. may be used on many shades.

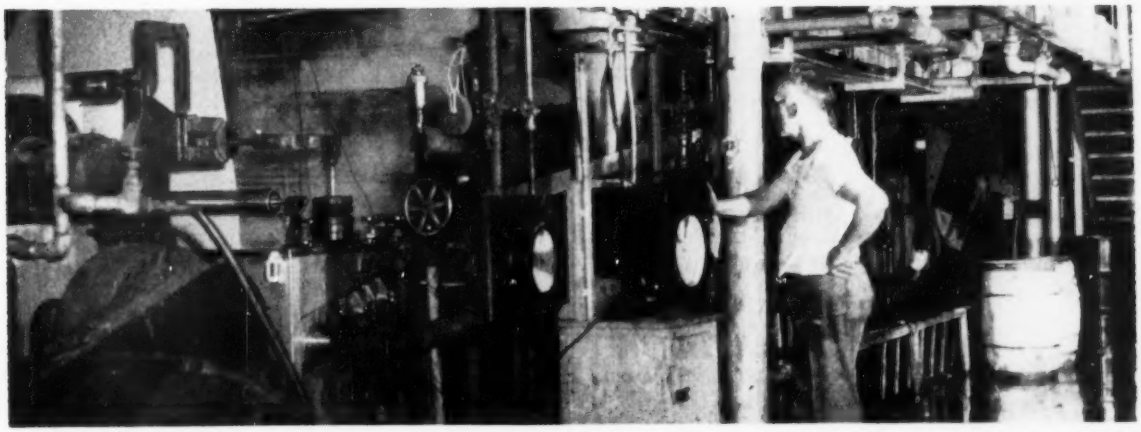
Personnel required for the Genray range vs. personnel for an equivalent number of pads and jigs is about 3 to 5, or a saving of 40%.



ENTERING THE PAD, cloth is fed over a sky roll to enable the selvage guiders to work effectively.



OVERHEAD SPACE is used for a platform that holds the supply tanks for dye, caustic and hydro, bicarbonate, and perborate solutions.



COMPACTNESS of the range makes operation simple. Three men handle the job. Reduction potential is indicated by the instrument under the operator's hand.

Machinery Organization

Machinery selection and operation for blends can be broadly classified as of three types, based largely on fiber length—

- **For short-staple synthetics, a modified cotton system is used**
- **Long-staple synthetics require worsted-type equipment in picking, carding, and drawing**
- **When wool is used in the blend, either tow-to-top, modified cotton, or modified worsted equipment can be used**

By SAMUEL L. FULLER, Barnes Textile Associates, Inc.

MANY COMBINATIONS of machinery are found in mills producing blended yarns, and no fixed plan of operation can be developed. But the machinery necessary for the processing of blends can be considered from three fiber standpoints:

1. Short-staple synthetics
2. Long-staple synthetics
3. Long-staple synthetics and wool

The first step to take in planning a yarn unit is to determine what range of fabrics management is interested in manufacturing and then decide what types of equipment will be needed in order to process yarns according to certain specific conditions.

For a hypothetical case, assume that management is interested in manufacturing three ranges of fabrics that fit the above classifications:

1. A line of women's dress goods calling for short-staple carded yarns of acetate, viscose, Orlon, and Dacron. Deniers of 1.5 and 3 with staple lengths of 1⅞ to 2½ ins. will be required.

2. A line of industrial fabrics made of nylon, viscose, and acetate with staple lengths from 2½ to 4½ ins. and deniers of 3 and 5.5.

3. A line of men's-wear suitings of fine wool and Orlon. A 64s wool will be blended with a 5.5-den., 4½-in. Orlon.

Short-Staple Synthetics Use Modified Cotton System

A modified cotton system is to be used for the first range of fabrics.

Stock for each component of the blend is fed through a hopper-distributor system to one of a series of bins behind the blending feeders. Each feeder is assigned to one of the components of the blend and is regulated to feed the proper proportions. The reworked-waste feeder is regulated to feed a small quantity of reworkable waste.

Based on a presentation at the spring meeting, Textile Div., ASME, held in Boston, Mass.

The line of blending feeders delivers stock to a common conveyor that goes into a hopper feeder and from there to the pickers. The production from an opening line such as this is approximately 800 lbs. per hr.; so a distributor is needed to balance the production of two pickers. Conveying of blended stock is better than blowing because differences in specific gravity of the fibers often cause separation in a blowing system.

If tint is to be added, normal procedure calls for application after blending feeders and before entering the hopper. This procedure is usually used when the blended stock is to be stored in bins before picking. In a completely enclosed automatic system, it is better to apply tint at the calender section of the picker and eliminate excessive scouring and cleaning.

PICKING. Picking equipment usually adopted for this type of work is a standard one-process picker. Both the upstroke and downstroke types have produced satisfactory results. Some mechanical changes have to be made: lower beater speeds (800 to 900 rpm.), a carding-type beater, and light weighting of the calender rolls. Lap weight generally ranges from 11 to 16 oz. per yd., depending upon what fibers are used in the blend, but a good average is about 13 oz.

Orlon blends present more difficulty in picking because of the lofty nature of the fiber, and it is quite often necessary to increase beater speeds to eliminate thick and thin places. New types of chemical finishes applied to the staple by the fiber producers are overcoming static conditions that manifest themselves in lap splitting, lap-ups, and other operating difficulties.

Viscose, acetate, and Dacron lend themselves to this type of system quite readily, and very little difficulty should be encountered as long as standard atmospheric conditions are maintained to a reasonable degree.

CARDING. A standard 40-in. rayon roller-top card equipped with either fillet or metallic wire on the cylinder and doffer produces excellent sliver for practically all types of short-staple synthetic blends. Extreme care should be exercised on stock with a staple length close to or slightly in excess of 3 ins. because loading of the cylinder wire and excessive breakage occur.

Quite often it is necessary to use a fancy with blends of nylon and Dacron to overcome a tendency these fibers have to become separated and thus change the blend. In a blend of Orlon it may be necessary to lower cylinder screens to avoid holes in the web. Also, in some cases feed-roll weighting must be increased to avoid plucking that jams the lickerin. Static eliminators are necessary, and a minimum of 60% r.h. and temperatures of 75 to 80° F. should be maintained.

for BLENDED YARNS

DRAWING. There are several good types of drawing frames that will satisfactorily process 1¾- to 6-in. synthetic fibers. Versatility of this nature is important; demands not made in picking and carding are very often made upon drawing, roving, and spinning. This situation would arise if a long-staple synthetic were to be blended with a short-staple synthetic to create a slubby effect that would show in the finished yarn.

It is also important to study the subject of weighting and develop proper top-roll weighting for the particular blend being processed, or excessive breakage will occur. Roll pressures vary, but in general a lighter weighting is required for man-made fibers. About 60 lbs. front-roll pressure is sufficient for most blends.

On frames that have tube-gear arrangements for delivering sliver into the cans, static eliminators should be used; but even then some trouble may be encountered with sliver piling up in the tube, especially if it is a light end. This difficulty can be overcome to a considerable degree with a positive-type coiling arrangement similar to that used on the Holdsworth gill reducer or the Warner & Swasey pin drafter.

Cushion-type top rolls are generally used; either Dayco or Accotex give good results. Front-roll speeds are usually not over 280 to 300 rpm. on a 1¾-in. front roll, and this speed allows production of about 12 lbs. per delivery per hour. Most modern arrangements use at least a 14-in. can. In practice, if the yarn is to be used for light apparel fabrics, two processes of drawing are generally used with a minimum of 36 doublings.

ROVING. Roving machinery should be flexible enough to accommodate fiber lengths up to 6 ins. and have front rolls up to 2 ins. in diameter. A spring weighting system has the advantage of considerable versatility as far as rapid weight changes and roll settings are concerned and is being used in a few of the more modern mills. Both single- and double-zone drafting elements are being used successfully. However, in cases where nylon or Dacron are being processed exclusively, the double drafting zone seems to be somewhat superior. Nylon has always been quite difficult to draft in a long-draft single-zone system, but if the back stock is approximately 45 grains per yard, good roving can be made.

SPINNING. The spinning operation is perhaps the least critical of all operations discussed so far because yarn characteristics have been formed by the last of the roving processes. Modern mills are using the following elements:

1. Flexible drafting zones capable of handling short and long staples from 1¼ to 6 ins.
2. Spring weighting systems
3. Vacuum coverage of the scavenger area (Pneumafil)
4. Umbrella-type creeling
5. Double roving on yarn numbers finer than 15s cotton
6. Large-package spinning (12 to 13 oz.)
7. Large ring diameters (3 ins.)
8. High spindle speeds (7,000 to 9,000 rpm.)

A typical organization to manufacture a 20s blended yarn of 60% 3-den. 2½-in. Orlon and 40% 3-den. 2½-in. dull acetate is as follows:

1. 12-oz. picker lap
2. 55-gr. sliver delivered from a roller card with a draft of 95
3. 55-gr. sliver from the first drawing process with six doublings and a draft of six
4. 50-gr. sliver from finisher drawing and six doublings and a draft of about six
5. Roving: 2 hk., draft of 12, 0.90 twist multiplier
6. Double roving in spinning, draft of 20, 3.50 twist multiplier

Picking, Carding, Drawing Changed for Long-Staple Work

To produce yarns for the second range of fabrics, different types of machinery are required in picking, carding, and drawing. Roving and spinning equipment is similar to that already described for shorter staples.

A typical modern layout consists of a line of blending feeders depositing stock onto a common conveyor apron that delivers to a worsted-type picker that feeds stock to an overhead condenser. From here the stock can either be conveyed to the hopper of a modified worsted card or baled and stored for future use. Production from an opening line such as this is better than 1,000 lbs. per hr. Baling is a good means of proper distribution of this amount of production.

A modified worsted card consists of a breaker section, an intermediate feed, and a finisher. Multiple deliveries from the doffer are coming into wider use because of the potential increase in doublings that can be obtained in the next process. The delivery weight ranges from 60 to 90 gr. per yd. The production of a card of this type is from 60 to 90 lbs. per hr. Improved design of the intermediate feed minimizes sliver variation. Metallic card clothing has been accepted quite widely for long-staple synthetics.

This type of card handles fiber lengths of 1½ to 6 ins. or more, but static eliminators are as necessary as for shorter staple lengths. Approximately 60% r.h. should be maintained with temperatures of 75 to 80° F.

A high-speed gill box is often used right after carding, and doublings range from six to eight, depending upon the weight of the carded sliver. The number of gilling operations depends upon the final yarn. For an industrial-fabric yarn, one gilling and one drawing process before roving is sufficient. On high-speed gill boxes, 1,000 drops per minute seems to be a good operating speed. Faller pinning should be about 17 per inch.

Roving and spinning machinery is the same as that described for short-staple fibers. The only difference is in roll settings and top-roll pressures. Gill control is being introduced on roving frames with good results.

(*Continued on page 236*)

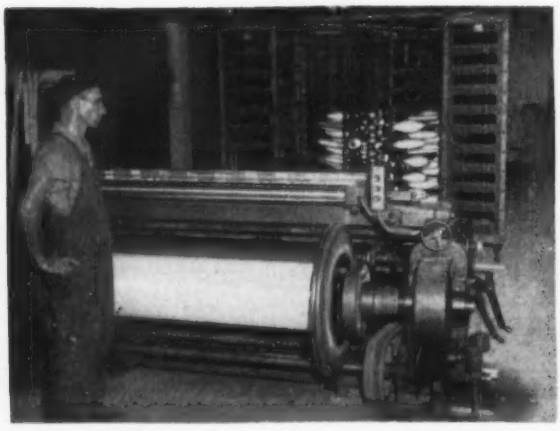
How Aldora Mills Makes TIRE CORD

▶ Rayon and nylon yarn are twisted with S-twist, plied with Z-twist, and woven on a creel-fed loom at 2 ppi. The nylon cord is tension set and coated with latex. Special beam-handling equipment is used.

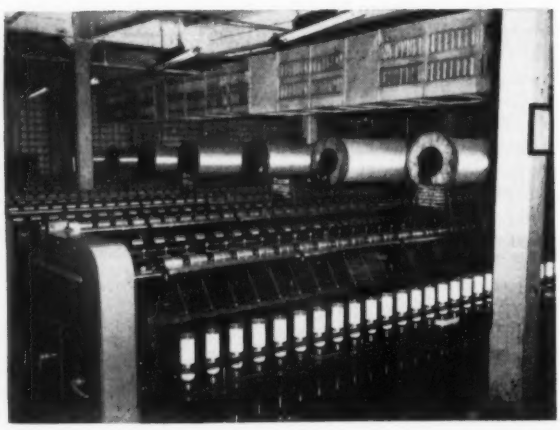
By E. DALTON WHITE, McGraw-Hill Atlanta Bureau

RAYON AND NYLON TIRE-CORD FABRIC is made by General Tire & Rubber Co. at Aldora Mills, Barnesville, Ga. The cabled-rayon yarns, all two ply, are 1,100 and 1,650 den.; the cabled-nylon yarn is two-ply, 840 den. The mill has 15,000 single-end twisting spindles, 10,000 cable twisting spindles,

NYLON

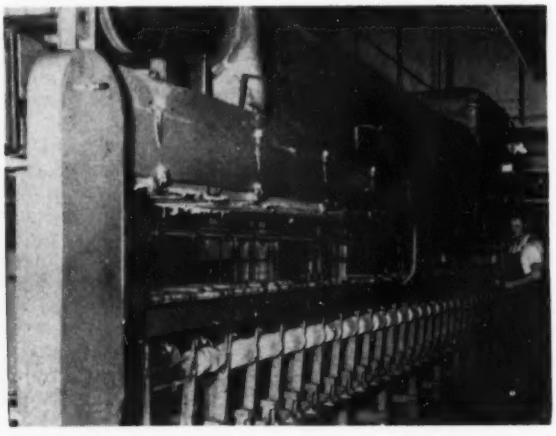


NYLON BEAMING produces a 160-end twister beam from continuously creeled supply pirns. Yarn-tension limits are 50 and 100 gms.; tension is just enough to hold the stop motions and produce a firm beam. Beams are reinforced for nylon, and they hold 26,000 yds. of 840-den. yarn.



TWISTING puts 12 to 13 tpi. into nylon yarn at 3,800-rpm. spindle speed. Bobbins are 3⅝x8-in. metal tubes for nylon trowing. Tension is controlled by weights on the beam and is just enough to keep yarn from sagging. Twisting-room air is maintained at 80° F. and 60% r.h. by the overhead duct system. Yarn is then cabled and coned.

NYLON IS HEAT SET on this Walter Kidde unit. A light latex coating is applied after the tension compensator evens the tension on all ends; a predip solution makes the cord soft and pliable. The cord passes on into the high-temperature oven.



AFTER HEAT SETTING in the oven, the nylon is wound into 3-lb. packages on 5-in. paper tubes. The packages are then taken to the loom creel where they are creeled according to the number of ends required in the tire cord.

and 28 creel-fed looms. Nylon processing requires additional tension-setting equipment, but the above machines are the nucleus of tire-cord manufacture. The details of the operations are given in the pictures and captions, but here is a general description.

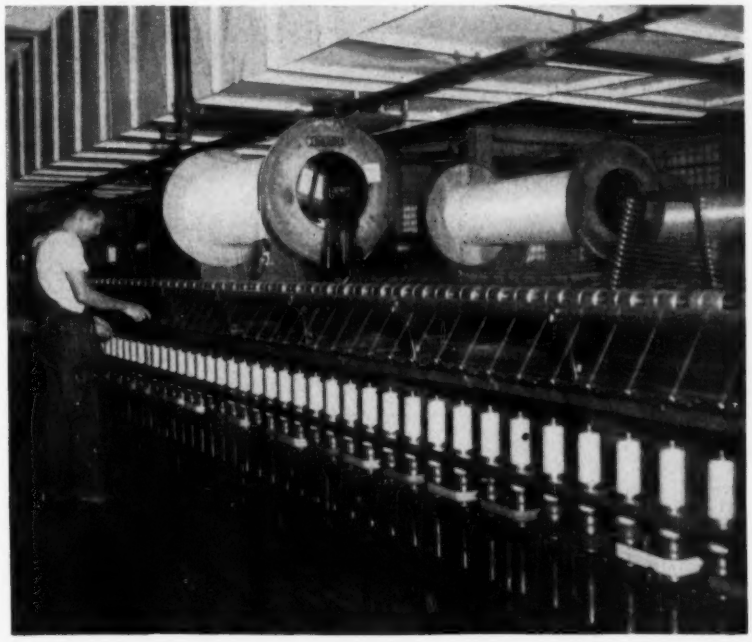
Z-twist is put in the single ends of yarn on the twisters. The amount of twist depends on the yarn, denier, and specific service and load requirements of the finished tire. After single-end twisting, two ends of yarn are cable twisted with S-twist; cabling Z-twist single-ply yarn into an S-twist cord gives maximum cord strength. This procedure is used on all deniers, both rayon and nylon.

The twisters vary in spindles from 152 to 160 (mostly 160). The mill keeps the spindles per twister low to prevent shaft and roller trouble and to reduce the effect of a down frame on production.

Weaving is also basically the same for rayon and nylon; the same looms are used for both yarns. The 30s cotton filling is put in only to hold the warp ends in place.

Additional Processes for Nylon

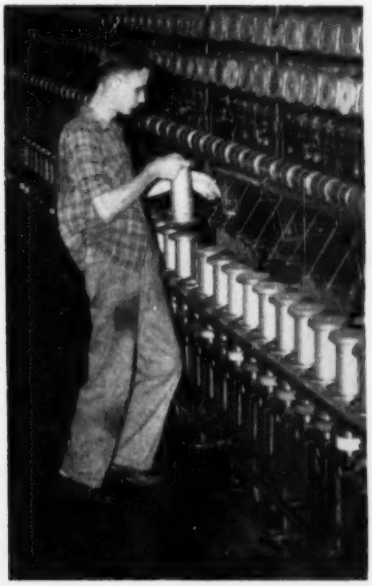
Beaming: The twisters at Aldora were set up to handle rayon beams as supply packages, but nylon is shipped on pirns. A Cocker warper is used to



TWISTING is done on 160-end twisters; twist is Z, 11½ to 14½ tpi. Tension weights on the beam are taken off as the beam gets lighter. Beams hold 15,000 yds. of 1,650-den. rayon or 28,000 yds. of 1,100-den. rayon. Bobbins hold 1.6 lbs. regardless of denier.

CONING produces a 6-lb. package from the cabled-yarn bobbins. Coning tension is kept as low as possible but is high enough to prevent knock-offs. Nylon cabling is the same as rayon cabling (see picture of rayon cabling) but special metal bobbins are used and twist is 10½ to 12 tpi.

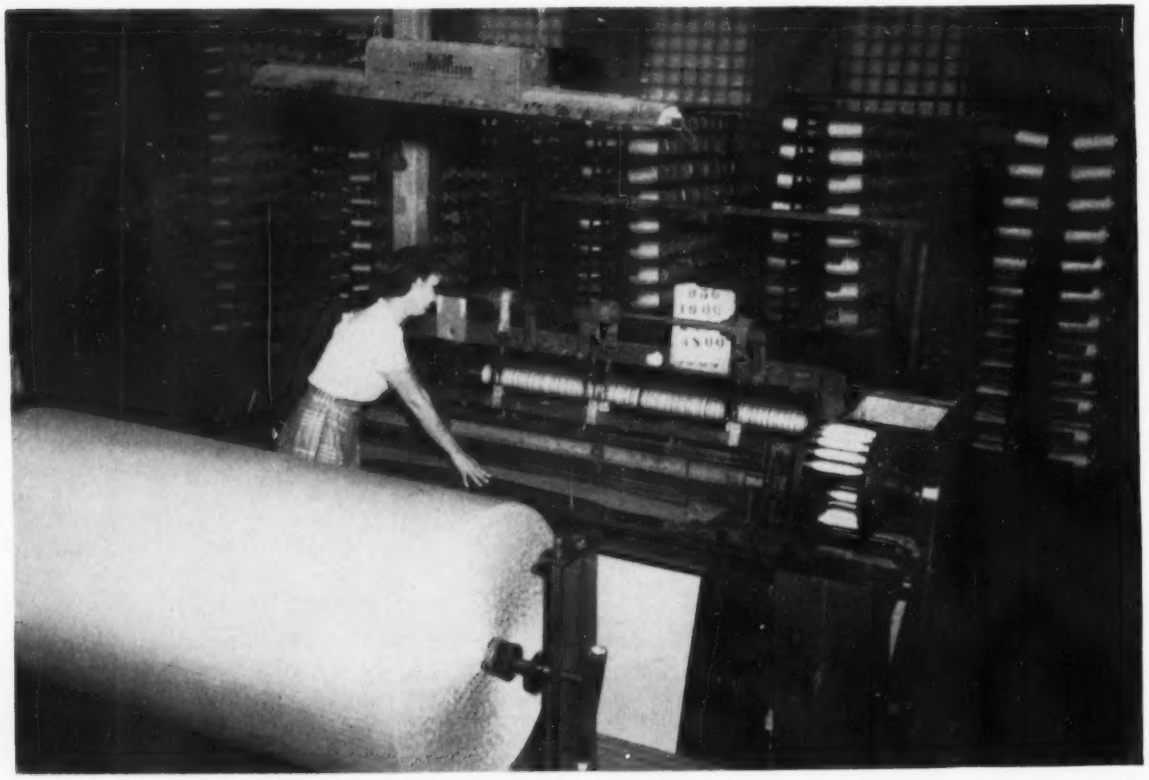
SPINDLE SPEED is maintained at 3,800 rpm. Strobotac checks are made on a regular schedule by the quality-control laboratory. If speeds vary beyond standard limits, the section hands are responsible for locating the defective tape or spindle and correcting the trouble.



CABLING is done on this 272-end H&B cable twister. Spindle speed: 3,000 rpm. Package: 3 lbs. Twist: 10 to 12 tpi. The 1/10 lb. of yarn left on each supply bobbin is respooled on a bobbin of the same size (5x8 ins.). The machine is running 1,100-den. rayon with a 31-tooth twist gear.

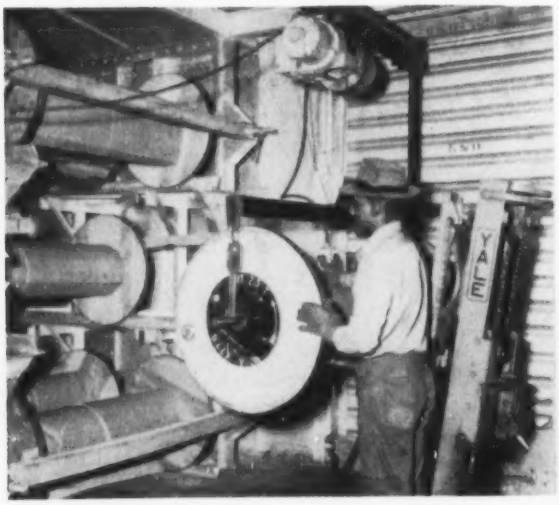
For pictures on weaving and beam handling, please turn the page

WEAVING

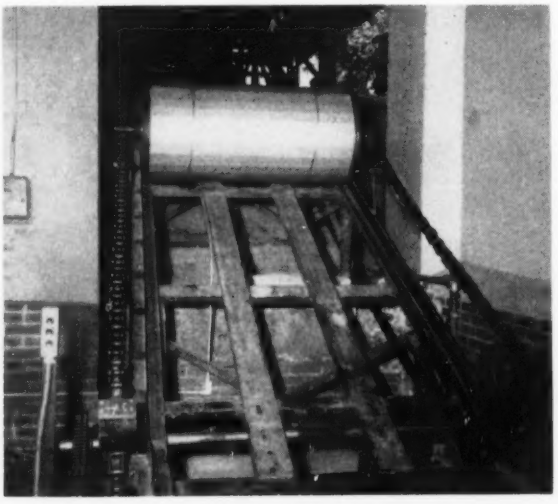


TIRE CORD IS WOVEN from the 3-lb. packages in the creels. Warp ends range from 850 to 1,950 ends, depending on the style and yarn denier; 2 ppi. of 30s cotton filling are put in to hold the warp ends in place. Fabric tension is just enough to make a firm roll.

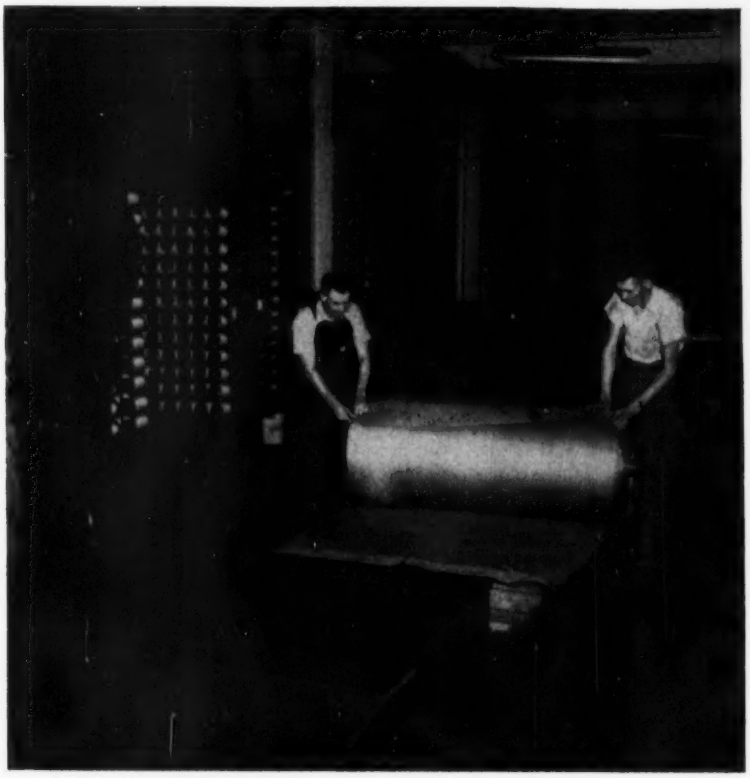
BEAM HANDLING



SPECIAL ONE-TON HOIST goes right into the specially designed freight car to load empty or unload full rayon beams. The fork truck is used to handle the beams loaded on the upper racks above the reach of the hoist. The same hoist is used with freight trucks.



THIS INCLINED CHAIN CONVEYOR was designed and constructed by the mill to carry beams to the storage room; brackets on the chain hold the beam in place. Before, a dolly and elevator did the job. Fork trucks carry the beams to the storage racks.



WEIGHING AND WRAPPING are aided by the inclined plane. Waterproof paper and light burlap are wrapped around the roll for protection. Rolls are standardized at 1,000 yds., but roll weights vary: 600 to 1,300 lbs. for rayon, 500 to 750 lbs. for nylon.

beam the nylon into beam supply packages with the number of ends corresponding to the twister spindles.

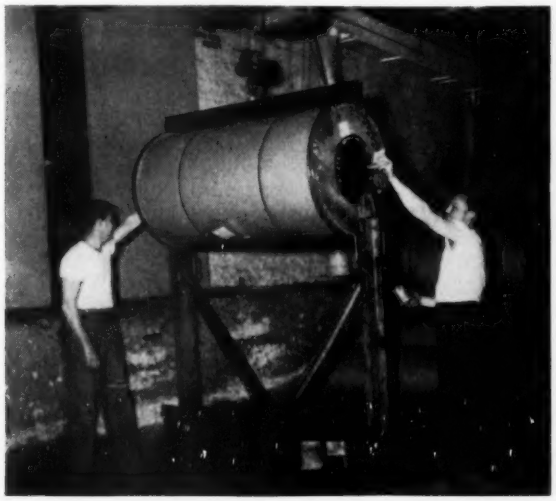
Coning: The nylon has to be tension set, and the machine that does this setting works from a creel that allows the continuous creeling of 6-lb. cones. A winding machine makes the jumbo cones from cabler bobbins.

Heat Setting: The tension troubles caused by nylon are well known. Aldora uses a Walter Kidde yarn machine to even out the tension on the nylon cord and to apply a light coating of latex. The solution is cured and the nylon heat set in a high-temperature oven. A 3-lb. package is wound on the back side of the oven, and these packages are continuously creeled in the loom creel.

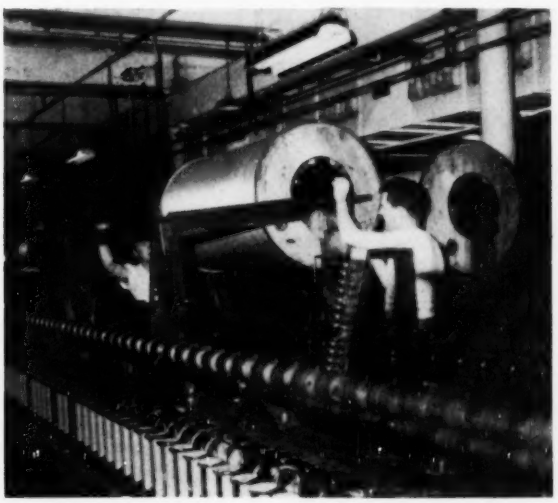
Besides the extra equipment, attention to tension control is the main difference between processing nylon and rayon cord; only enough tension is applied to nylon to prevent knock-offs and to make firm packages.

Rayon Beam Handling

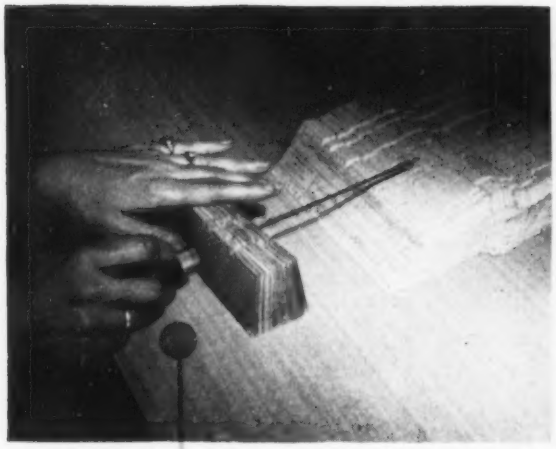
Since rayon yarn is supplied on beams, beaming is not necessary at Barnesville; but beams present a handling problem that Aldora has solved with standard equipment plus mill-designed and mill-constructed equipment. The outgoing beams of tire cord shipped to the tire-processing plants at Waco, Texas, and Dayton, Ohio, are handled with most of the same equipment.



DOLLY carries the beams from the storage room to the throwing room; fork trucks did the job before. The overhead trolley hoist lifts the beams from the storage racks to the dolly. The beams are stored according to denier and supplier.



REMOVABLE ARMS connect the beam dolly to the beam holder on the twisting frame, and the rayon beam is rolled into place without any physical lifting. The beams range in size from 28 to 32 ins., but the trend is to larger-size heads.



CARDS ARE PROCESSED in the main office each day. Departments, shifts, and bins can be quickly sorted.

TOTAL NUMBER OF PARTS in stock at all times is shown by this stock record kept in the general office.

Card Index Controls SUPPLIES

At No Extra Personnel Cost

▶ This efficient but low-cost supply system at Eastman Cotton Mills, Eastman, Ga., has been in operation three years. The same number of supply-system personnel employed on the old supply system keep the improved system operating smoothly. Results of the new system are—

- **Stock of supplies is always adequate**
- **Overbuying of stock is eliminated**
- **Supply costs are low**

By MACK D. HEATON, Superintendent, Eastman Cotton Mills

LITTLE CLERICAL WORK is needed to keep the supply system functioning smoothly at Eastman Cotton Mills. One supply clerk on each of the three shifts issues supplies to section men from all departments of the mill and, in addition, keeps a perpetual inventory (a card-index system) of the supplies in stock. No increase in personnel was made when the system was set up.

The Inventory Includes Every Supply Part

Every part issued by the supply room—including washers, bolts, nuts, and other small parts—is issued by order. The price of the inventory care on some of these parts exceeds the cost of the parts, but the system must be carried out on all items, large and small, to really show good results.

Order cards are filed for periods of one year. It's easy to check the cards at any time to see how many pickers, picker sticks, and other items are being used. The records taken from the cards keep us posted on waste of supplies and the careless use of any kind of stock. Since we're able to check often and closely on any stock used, we are able to keep our supply costs low.

Loomfixers and other section men write their own orders on McBee Keysort order cards. Each type of item ordered requires a separate card, but several parts of the same type—three pickers, two picker sticks, or three lug straps—can be ordered on the same card.

It's easy for the section man to write an order. He fills in spaces on the card for the date, shift, department, machine number, section number, name of the part, number of parts wanted, and his initials.

The cards filled out on each shift are processed by the supply clerk on that shift. He adds to the card the bin number, the unit price of the part, and the total value of the order.

The supply clerk also punches the edges of the card so that the record clerk in the main office can process the cards when they get to her. He punches the card to show the shift, department, machine number, section number, and bin number.

Each bin of parts in the supply room has a card containing the total number of parts in the bin. Each time a supply clerk issues a machine part, he changes the total number of parts listed on the supply bin. This method results in a fairly accurate record of the number of parts in stock at all times.

To make sure the inventory is cor-

rect at all times, the supply clerks count the parts in 50 bins each week. With the two methods of checking the inventory in the supply room, there's little chance of error.

Stock Is Ordered When Minimum Level Is Reached

The card showing the number of parts in a bin also shows the minimum number of parts that should be in the bin. The minimum number is determined by the department overseers' and the supply clerk's estimate of the number of parts needed and by the knowledge gained by having run out of supplies in the past.

When the number of parts in a bin reaches the minimum, the first-shift supply clerk (second- and third-shift supply clerks notify the first-shift supply clerk if the minimum is reached on their shifts) fills out a requisition order for an additional supply of stock from a specific supplier and sends it to the plant superintendent.

The superintendent signs the requisition and routes it to the record clerk, who makes out a purchase order to the supplier. Orders usually go to suppliers who have supplied satisfactory products in the past. Occasionally, the superintendent changes the order to a supplier who has a new product or a product he wants to test.

All salesmen for supplies are required to call at the mill office, not at the mill. When a new product shows promise of being useful to the mill, an overseer of a department comes to the main office to see the salesman.

Cards Are Processed In the Main Office

Orders received in the supply room from section men and overseers are given to the record clerk in the main office once each day. She sorts the cards by bin numbers and posts the orders in a stock record where a running tally of all stock is kept. When stock on any part is reduced to the minimum number of parts, the record clerk reminds the supply clerk to reorder the part if he has not already reordered it.

Orders received from suppliers have duplicate packing invoices. One of the invoices is filed in the supply room, and the other is sent to the record clerk so that she can enter the material on the stock record.

After the order cards are processed in the stock record, they are sorted by departments and sections to compute the supply cost for each section. The supply costs for operating the entire plant are computed once each week, and a report of this cost is given to each overseer.

SUPPLY REPORT

	Department	Week Ending 11-2	11-15	11-22	11-28	Total
1.	Handling and Storage	$ -	$0.44	$32.59	$ -	$33.03
2.	Opening and Picking	29.82	2.98	6.46	212.27	251.53
3.	Carding	431.47	2616.03	158.36	144.53	3,349.39
4.	Drawing	-	-	0.96	-	0.96
5.	Slubbing	76.10	13.39	20.68	28.25	138.42
6.	Spinning	73.41	23.83	68.96	20.06	186.26
7.	Spooling	49.25	41.13	120.46	1204.37	1,415.21
8.	Warping	--	--	--	--	--
9.	Slashing	24.48	41.93	23.61	24.63	114.65
	Starch & sizing compound	642.11	534.10	528.88	715.69	2,420.78
10.	Drawing in and Tying in	26.04	--	--	78.95	104.99
11.	Weaving					
	First Shift					
	Section No. 1	20.77	149.75	34.79	75.76	281.07
	General	257.05	339.86	219.76	104.01	920.68
12.	Cloth	9.00	9.46	192.27	1.13	211.86
	Packing	378.87	120.83	59.34	216.53	775.57
13.	Shop and Yard	161.12	5.86	2095.27	359.75	2,622.00
14.	Office	11.59	--	89.57	61.83	162.99
15.	Village					
	Maintenance and Repair	156.53	32.75	320.91	6.16	516.35
16.	Miscellaneous	320.15	0.59	103.43	1.02	425.19
		--	3.05	--	1.18	4.25
	Totals	$3,188.24	$4,451.96	$4,555.67	$3,863.98	$16,059.85

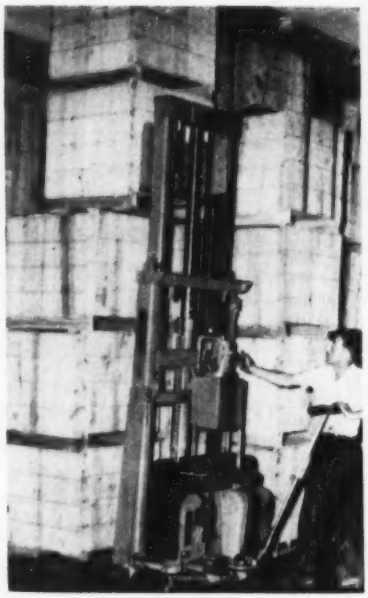
WEEKLY SUPPLY COSTS of every department in the mill are shown by this record that is summed up each month.

One advantage in distributing the loomfixer's section cost each week is that we get a good idea of the work that all loomfixers are doing all the time. For instance, if a loomfixer's supply costs are abnormally low, we know that he is not doing his part in keeping his looms in top operating condition. On the other hand, if his costs are excessively high, it is likely that he is wasting supplies. In these cases, the shift overseer works closely with the loomfixer until the trouble is eliminated.

Materials needed to operate the supply system are:

1. Supply requisition cards
2. A punch for the requisition cards
3. A sorter for the requisition cards
4. An alignment block for the requisition cards
5. Three stock-record binders
6. Index leaves for the stock record

PLENTY OF COTTON near the opening room is possible when industrial trucks of the high-lift type are used. The use of the truck proved so economical in this plant that trucks are now being used in all of the company's mills.

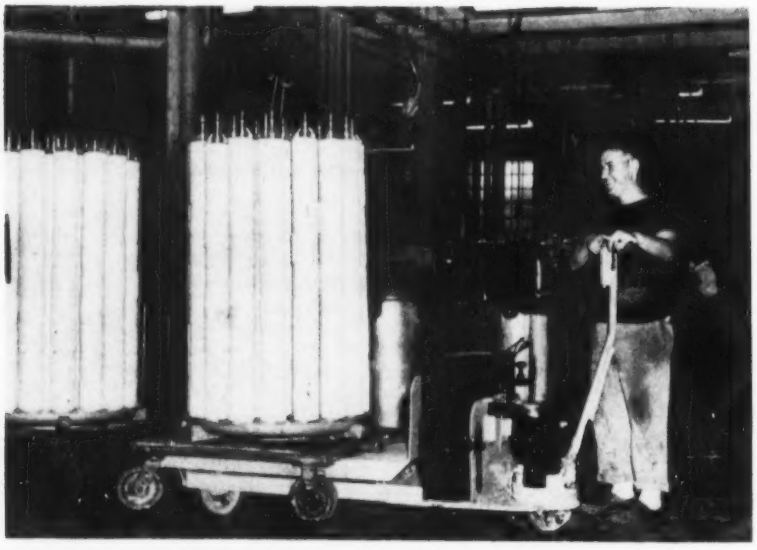


PROTECTION TO FINISHED YARN is given by these wire-bound wooden cartons. The pallet-handling truck stores the lightweight cartons until the material is transported to its destination. Only a few inches separate the cartons from the ceiling.

YARN IN SPECIAL CONTAINERS is stored by a battery-powered truck that lifts two of the baskets at once. Yarn is transported between plants in the containers to avoid extra handling. The baskets may be folded when empty.

These MATERIALS-HANDLING Ideas Pay Off at American Thread Co.

By THOMAS L. GRIFFITH



THIS DOLLY LOAD OF THREAD is being removed from the platform truck with an overhead hoist. The packages of yarn will be immersed in a dye vat. Later, the hand-lead platform truck will carry the package-dyed yarn to the next manufacturing process.

Along with the other economies that result from the use of power trucks in materials handling is the saving in elimination of a second handling of raw materials from a distant warehouse to the area adjacent to the opening room.

Where the overhead room is sufficient, bales of cotton or synthetic fibers may be interlocked and placed six bales high with power trucks. When hand trucks are used, the bales have to be stacked on end; and consequently few bales can be stored near the opening room.

In several plants of American Thread Co., a total of 1,500 more bales can be placed in the active warehouses with power trucks than were stored there by hand trucks.

Talk about tailor made: American Thread Co. designed and built a special type of collapsible container to fit into truck trailers. Made from heavy-gauge wire, the containers—for yarn—are 28 ins. wide, 36 ins. long, and 28 ins. high.

The dimensions were chosen to load the company trailers three wide and three high. The 30-ft.-bed trailers can carry 76 containers, and the 32-ft.-bed trailers can carry 81 containers at a full load.

The trailers are loaded and unloaded with a powered fork truck that handles two containers at a time. The average loading or unloading time is 28 mins.

	Breaker		Finisher	
	Before	After	Before	After
Roll settings (back to front) (1 13/32-in. Karnak cotton)	Staple length + allowance	1 7/8, 1 1/2, 1 5/8	Staple length + allowance	1 7/8, 1 1/2, 1 5/8
(1 1/8-in. M cotton)	Staple length + allowance	1 5/8, 1 5/8, 1 3/8	Staple length + allowance	1 5/8, 1 5/8, 1 3/8
Intake-zone draft	1.31	1.79	1.36	1.95
Middle-zone draft	1.76	1.10	1.91	1.08
Front-zone draft (delivery)	2.39	2.74	2.50	2.93
Total draft	5.5	5.4	6.5	6.2
Sliver delivered (grains per yard)	65	65	60	60
Percent evenness (Pacific tester)	31.7	28.0	26.4	17.3

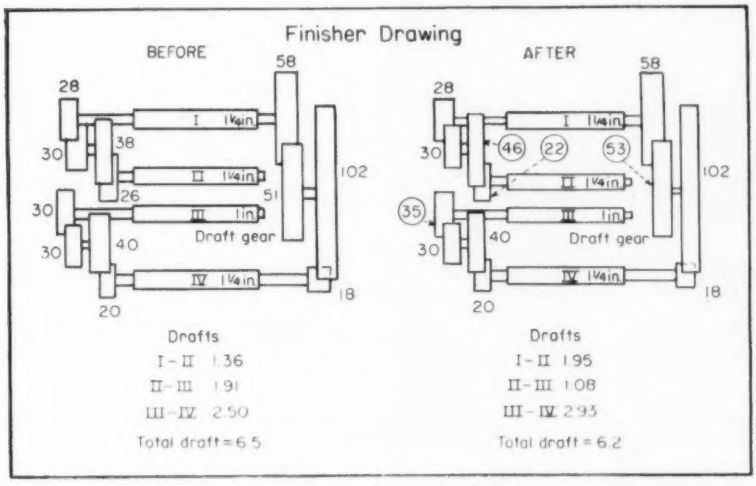
DRAWING-FRAME CHANGES are summarized in this table. Ends up remained at six; roll diameters were kept at 1¼, 1¼, 1, and 1¼ ins. from back to front; and front-roll speed stayed at 320 rpm. Drawing is four-roll H&B. Evenness was noticeably improved in each case. Roll settings are tailored to the new concept of reduced middle-zone draft.

Uniformity Improvement Centers on DRAWING

► **Reducing the middle-zone draft on conventional four-roll drawing frames improved evenness 16.7% on breaker drawing and 37.2% on finisher drawing**

► **Other changes, from opening through spinning, added up to 10% improvement in yarn uniformity**

By JOHN DUERST, Coats & Clark, Inc.



MIDDLE-ZONE DRAFT was considerably reduced, but other drafts were increased to keep total draft about the same. The four gears circled were changed.

THE DRAWING PROCESS still holds the balance of power in a spinning mill.

Our problem was to improve sliver evenness on our conventional frames. Buying new drawing would have been an easy answer; but we used what we had, examined all processes from opening through spinning, and improved yarn uniformity 10%.

Working on our theory that drawing is the key process, we started there and then went to the other processes.

Draw Frames Were Overhauled And Drafting Setup Changed

Both our breaker and finisher drawing (four-roll H&B) were completely overhauled. Bearings were repaired, bottom rolls straightened, gears with broken teeth replaced, roll necks built up, and worn top-roll bushings replaced.

We also changed the drafting arrangement, as shown in the accompanying illustration. The following drafts were adopted for combed-drawing work with six ends up:

For the intake zone

$$0.81 \times \sqrt{\text{Total Draft}}\ ^{*}$$

For the middle zone

1.08; 1.09; or 1.1

For the delivery (front) zone

$$\frac{\text{Total Draft}}{\text{Intake Draft} \times \text{Middle Draft}}$$

* Gears cannot always be arranged to fit the 0.81 constant exactly.

With these new drafts we got the

(Continued on page 234)

Alabama Mill Men Check Up on WEAVING

▶ **The Alabama Textile Operating Executives met at Auburn for their spring meeting to talk about weaving. They found that—**

- **Controlled week-end stoppages improve weave-room production**
- **Mills are rapidly changing to metallized take-up rolls**
- **Mixed and waste filling are prevented by new handling ideas**
- **Diehl drives appear to have eliminated many loom-driving troubles**

What do you do with shuttles during the week-end shutdowns?

a. Do you leave the shuttle in the shuttle box?

b. Do you take the shuttle out of the box?

c. In either case, what method do you use to start up on Monday?

d. How do you control your humidity over the week end?

Eight Mills Leave Shuttles In Looms Over the Week End

Mill 1. "We leave the shuttles in the shuttle boxes when we stop our looms for the week-end shutdown.

"When we start up our E-model looms on Monday, we position the shuttles all the way in the shuttle boxes and start the loom. Before starting XD looms, the loomfixers put a small portion of Vaseline on the face of the binder.

"Our humidity is left at 70% r.h. over the week end."

Mill 2. "When looms are stopped on Friday each week, the shuttles are left in the positions they're in when the looms stop.

"All shuttles, binders, and box plates are rubbed with tallow each Friday.

"Oilers and filling haulers report for work half an hour early on Monday to push all shuttles into the shuttle boxes and to position loom lays so that weavers can start the looms quickly when they report for work at the usual starting time.

"The humidity is completely cut off at the beginning of the week end and restarted 1 hr. before starting time on Monday morning. This arrangement is satisfactory for the styles of cloth we weave."

Mill 3. "We leave the shuttles in the shuttle boxes.

"Our looms are started at the beginning of the week in the normal starting manner.

"The weave-room humidity is reduced over the week end and is built up to our usual relative-humidity reading by Monday starting time."

Most Mills Reduce Humidity During Week-End Shutdown

Mill 4. "During the week end, we place all shuttles in starting positions in the shuttle boxes. On Monday, looms are easily started.

"We cut off the humidity on week ends. If the weather is hot and dry, we begin building up the relative humidity of the weave room from 1 to 3 hrs. before work time. If weather conditions are good, we start the humidity at starting time."

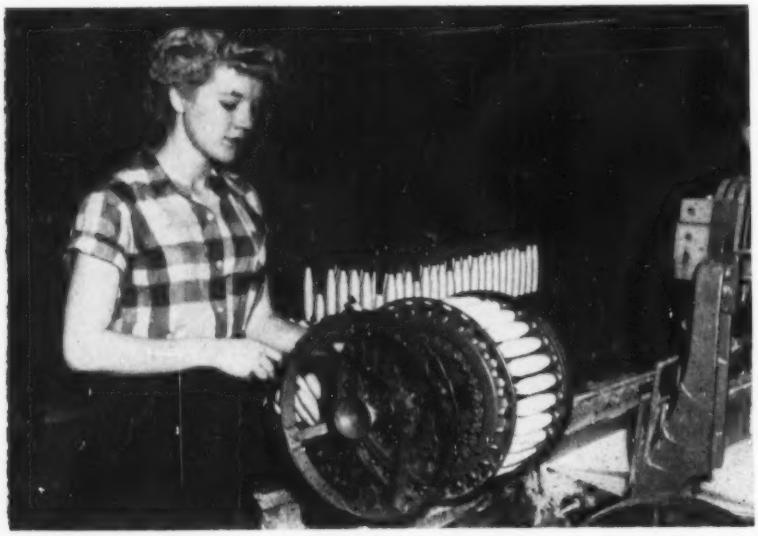
Mill 5. "Shuttles are left in the box during the weekend shutdown. Prior to starting the looms on Monday, we apply a small portion of shuttle grease to the leather surfaces in the shuttle boxes opposite the shuttles.

"The humidity is shut off during the week-end stoppage."

Mill 6. "Shuttles are left in the boxes over the week end.

"When looms are started shuttles are polished with a rag saturated with lard oil.

"The weave-room humidity is dropped 20 points over week ends. To bring the humidity reading back to normal, our central-station air-conditioning units are restarted 3 to 4 hrs. before weaving operations begin."



PINBOARDS ON TRUCKS help batteryhands keep filling untangled and, consequently, reduce waste.

Mill 7. "Shuttles are left in the box, and weavers restart the looms from the week-end stopping position without any other preparations.

"The humidity is cut off when the plant shuts down but is operated 6 hrs. in the middle of the day on Sunday and is restarted 2 hrs. before the looms are restarted on Monday morning."

Mill 8. "We leave shuttles in the boxes over the week end.

"Our humidity controls are turned back to 65% r.h. over the week end. Controls are turned up to 83% r.h. 4 hrs. before the shift starts after a week-end shutdown.

"American Moistening Co. controls keep the weave room at 82% r.h. when the weave room is running.

"Since filling yarns give us a lot of trouble on restarting days, we have a special filling-conditioning program for these days.

"Filling is ordinarily conditioned in a Hygrolit machine with a water mixture containing 0.5% Eureka conditioning fluid. The filling is taken to the looms 2 hrs. after it is conditioned.

"We do not condition filling on the last shift before a week-end shutdown.

"Coarse filling (6.75s or coarser) left in the batteries of the loom is sprayed with the filling conditioner 2 to 3 hrs. before the shift starts."

Four Mills Take Shuttles Out of Boxes Over Week Ends

Mill 9. "We leave the shuttles out of the boxes.

"While the shuttles are on the cloth, the assistant foremen inspect them for general condition. Since we don't have to stop the looms to inspect the shuttles, our production is increased slightly.

"When we restart E-model looms, we replace the shuttles in the box and simply restart the looms.

"When XD looms are started, the loomfixers put a small spot of Vaseline on the face of the binders, replace the shuttles, and then restart the looms.

"Humidity is left at 70% over the week end."

Mill 10. "We take the shuttles out of the boxes.

"In starting the looms, a little tallow or oil is placed on the shuttle and rubbed in.

"Our humidifiers are cut off over the week end. Usually, they are restarted about 2 hrs. before operations begin."

Mill 11. "Shuttles are left out of the box.

"Weavers restart the looms. When a loom slams, the weaver puts some shuttle dressing on the shuttle to prevent reboxing the shuttle.

"We cut the humidity off when we stop the looms and turn it back on 20 mins. before we restart the looms."

Mill 12. "On week ends, shuttles are removed from the shuttle boxes.

"Shuttles are replaced without any special treatment when the looms are started.

"If week-end shutdowns are longer than 24 hrs., humidifiers are cut off and then run for a 2-hr. period during the shutdown."

Nine Out of 10 Alabama Mills Prefer Metallized Take-up Rolls

What is your experience with metallized take-up rolls as compared with conventional perforated metal covering?

a. How does it hold up on heavy fabrics and on high-count fabrics?

b. Does it alter the picks per inch in cloth?

c. Does it mark or change the face or appearance of cloth so that these defects show up in finished cloth?

Mill 1. "We prefer the metallized take-up rolls. We have had some trouble on about a hundred looms where we sprayed the metal on the rolls too fine.

"Nutting bars were added to all our looms when the rolls were metallized so that we could doff cloth without stopping the looms.

"We're able to doff the cloth without trouble on looms except those sprayed too fine.

"Since we do not run heavy fabrics, we don't know how well metallized rolls hold them. The rolls hold well on high-count fabrics.

"We haven't noticed any difference in the number of picks per inch.

"As far as we can tell, metallized rolls do not harm the cloth."

Mill 2. "All our looms are being metallized in a normal replacement program except on looms weaving tubing and seamless bagging. Some metallized rolls are still running satisfactorily after four years of service.

"Metallized rolls perform satisfactorily on our heaviest construction, 40x28 40-in. cloth.

"The rolls do not alter the picks per inch or damage the cloth in any way when the metal is applied properly."

Mill 3. "We have a large number of looms with metallized rolls and like them better than conventional rolls. No difficulties have been experienced with the metallized rolls.

"These rolls hold up equally well on heavy fabrics and high-count fabrics."

Grooved Rails Make Cloth Hold Better at One Mill

Mill 4. "We have limited experience with metallized rolls. So far, the metallized rolls are doing fine.

"On flat work we have found that metallized rolls hold better when we groove the sand rail before we metallize it. We groove the rail in a day by starting in the center of the rail and cutting a spiral cut to each end.

"In our type of cloth constructions, we notice no change in the number of picks in the cloth because we keep the diameter of the rolls the same dimensions as the fillet-covered rolls.

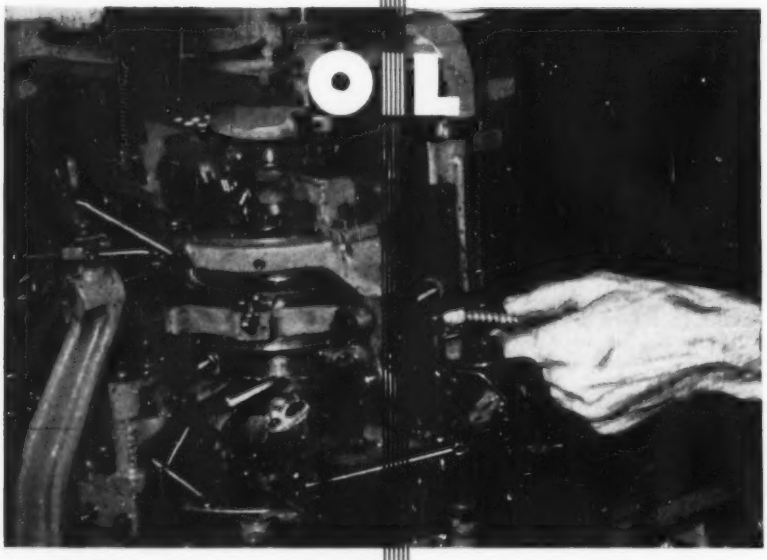
"No change in the appearance of the cloth is noticeable."

Mill 5. "We have been running about 125 metallized rolls for about

(*Continued on page 194*)

How To

and



SEAMLESS-NYLON MACHINES

To guarantee top-quality products—

- **Remove all size carefully**
- **Lubricate needles and sinkers regularly**
- **Use correct lubricants**

By B. M. DUNHAM, Sun Oil Co.

ADEQUATE AND TIMELY CLEANING and oiling of seamless-nylon hosiery machines result in fewer rejects, better quality products, and trouble-free performance.

Clean Before Oiling

The machines should be thoroughly cleaned once a week. Nylon yarn of 30 den. and above is heavily sized, and the size will clog the sinker slots and cause the sinkers to bind and stick unless the machine is properly cleaned at regular intervals. The following cleaning procedure is recommended:

1. Blow dirt and lint out of the working parts of the head with a long-nozzled air gun. Proper high-pressure blowing off will remove much of the hardened size as well as other contaminants.
2. With the machine running, squirt enough size solvent on the needles and sinkers to dissolve and flush up any size that remains.
3. Blow off the machine again and use the air gun to remove the solvent.

Oil Needles and Sinkers

A light machine or needle oil may be applied from a can or from the spray gun over the sinker ring to allow the oil to work into the sinker slots and down the cylinder walls. A light air blow after this oiling will remove excess oil. Oil immediately following cleaning because the size solvent contains moisture, and rusting will occur if oiling is postponed.

In addition to being oiled after each cleaning, needles and sinkers should be lubricated by the operator or specially designated personnel once each shift. For oiling other than after cleaning, the oil should be applied slowly from an oil can so that it can flow down the cylinder walls without flushing up size and dirt into the knitting area.

Don't Forget Gears, Bearings

The other working parts of the machine should be lubricated once a week with a machine oil having a viscosity between 300 and 500 SSU. at 100° F. This oil should have sufficient film-strength characteristics to maintain a tough, adequate film between gear, bearing, and cam surfaces to minimize wear.

Care should be exercised by the oiler not to overlubricate and cause bad housekeeping. A high-quality, tenacious-type machine oil applied in the right quantity will provide satisfactory lubrication between oiling periods. A weekly oiling schedule protects parts from wear, rust, and corrosion.

(Continued on page 178)

ASME Checks Up on DYEING and FINISHING Developments

► **Developments in dyeing and finishing in recent years have been stimulated by the introduction of new fibers. Some processes and machines have succeeded; others have disappeared. Here Mr. Goldberg comments on:**

- **Heat setting**
- **Textone bleaching**
- **Continuous vat dyeing**
- **Flameproofing**
- **Pressure dyeing**
- **New machines**
- **New resins**
- **New dyes**

By JULIUS B. GOLDBERG

Heat setting of nylon, Dacron, and the acrylics requires careful control. Earlier methods depended on prolonged boil-off at a high temperature or use of an autoclave in which rolled-up fabric was subjected to steam pressure. Now, specially designed machines with heated rolls or hot-air devices used in conjunction with framing are more satisfactory.

Adequate, even heat application and proper cooling by skving, air currents, or water-cooled rolls are necessary. Overheating or too long an exposure to moderate heat can cause yellowing of whites or discoloration of light shades.

Radiant heat controlled by thermocouples has been applied in several new systems. Speeds up to 40 yds. per min. at temperatures up to 700° F. can be obtained with black radiant heat in a system that utilizes energy-saving reflectors and electronic potentiometer controls. Heat-measuring instruments for checking actual cloth temperature are available for controlling and recording operating temperatures and speeds.

A British technique for setting nylon knitted fabric uses heated mercury as a setting medium rather than air. A 200° C., 15-sec. exposure is said to be sufficient.

Textone bleaching of woven rayon fabrics has proved practicable, but the equipment cost is a major obstacle. Reinforced plastic equipment needed for the range costs $10,000.

Adapted from a paper delivered before the Textile Div., ASME., at a recent meeting in Boston, Mass.

Continuous vat dyeing of rayon has come into greater use because of greater demand for faster colors. The Du Pont pad-steam process and the Williams unit of General Dyestuff Corp. have grown in use and importance. The Marhen process of reduction-potential control has led to advanced techniques in vat dyeing. The hot-oil process has become of less importance with advancing aqueous techniques. The Standfast molten-metal process has found only one installation in the United States, and that is in an embroidered-fabric dyehouse.

Pressurized dyeing in becks and jigs has not become practical. As a result of the need for open-width fabric-dyeing equipment, the Du Pont Barotor was developed. A recent improvement in the basic machine and in its loading method have made it more practical. Excellent results have been reported on some hard-to-dye fabrics. Fiber stock, top, and yarn-dyeing techniques have become common and improvements continue to come.

The Burlington machines for dyeing of nylon and acetate tricot and marquisette fabrics were well received. Users of the machines report better quality dyeings with less labor, time, and chemicals. Cloth is said to lie flatter and to cut better than beck-dyed fabrics.

Continuous presetting and dyeing of acetate tricot was made possible by a development of the Textile Research Dept. of American Viscose Corp. Four machines are in commercial use at present. Strength of the fabric dyed on this principle is said to be 20% better than normal, yield is better, and shrinkage is less than on the normal rope-dye fabric.

The Bond machine, sponsored by the Pittsburgh Coke & Chemical Co., offered a new principle for dyeing all types of fabrics. Fabric passes between a pair of perforated plates that squirt the dye liquor onto both sides of the cloth simultaneously. Two finishing plants in the South will have commercial installations by this fall.

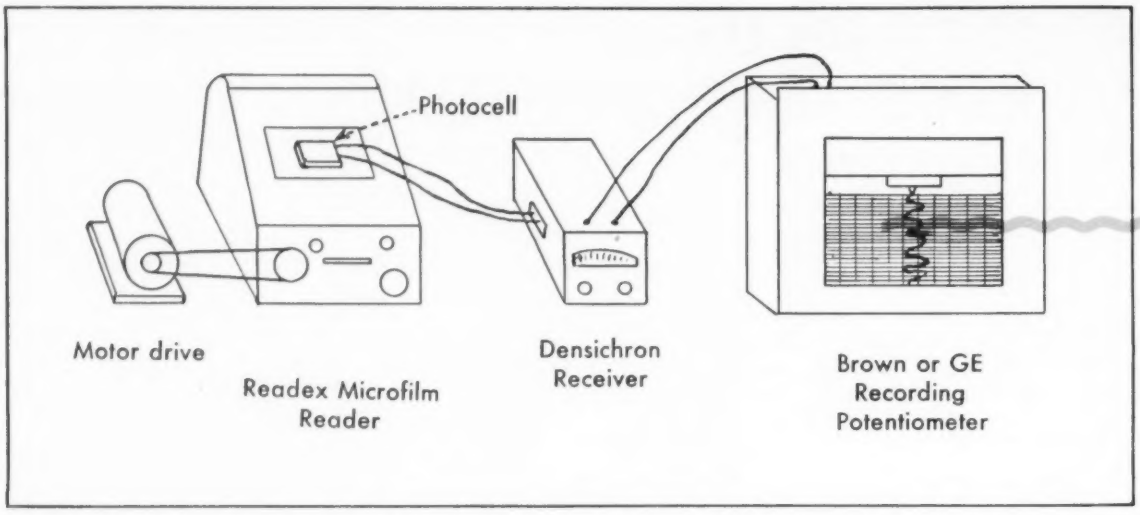
Resin-application techniques have received much attention lately. With new knowledge of control and effects, the art is becoming a science. Use of tension controls, overfeed devices, air-lay dryers, and flash curing is becoming more common.

Rayon stabilization is receiving more and more attention. Fabric life of rayon treated with the new Aquex, Avcoset, and X-2 processes is said to be much better than when urea-formaldehyde resins alone are used.

Silicone-resin application to acetate fabrics has been the subject of research performed by Celanese Corp. It has been found that water repellency, abrasion resistance, and tear strength can be improved. Needle cutting in sewing is reduced and wrinkle-recovery properties are improved by silicones. However, the improvement of acetate fabrics is not confined to the silicones. Permel resins have been used to advantage in imparting many permanent benefits to fabrics that do not receive dry cleaning, such as umbrella cloth, shower-curtain material, etc.

Printing of solution-dyed acetate fabrics, in a process called Roto-Tone, was recently announced. In the process, new fast-drying dyes are used in a procedure similar to paper printing.

(Continued on page 194)



ASSEMBLE THESE UNITS and you have a Streakmeter. The fabric image is magnified 12 to 18 times and is moved across the photocell, which has a special cover with a 0.008x1-in. slit.

How To Analyze WARP STREAKS In Continuous-Filament Fabrics

▶ The Streakmeter, an instrument assembled from commercial units, classifies warp streaks into those caused by the yarn and those caused by spaces between the yarns; it does not assign more specific production causes. An over-all streakiness value can be calculated for a piece of fabric.

By H. F. HUME, E. H. OLSON, and C. E. REESE
E. I. du Pont de Nemours & Co., Inc.

AN INSTRUMENT TO ANALYZE warp streaks in continuous-filament fabrics has been developed from commercial units in the Carothers Research Laboratory of E. I. du Pont de Nemours & Co., Inc. The instrument, called the Streakmeter, tells whether a warp streak is caused by nonuniform-appearing yarn or uneven spacings between the yarns. The Streakmeter does not assign a more specific cause, such as uneven denier or a tight warp yarn, to the streak; but the instrument does permit a more precise location and identification of streaks than was previously possible.

How the Streakmeter Works

Warp streaks are caused by differences in yarn color, differences in yarn denier and yarn patterns, and variable spacings between the yarns. The Streakmeter measures and records the relative intensities of light reflected from each warp yarn and from each space between the yarns.

The instrument developed at Du Pont is an assembly of a motorized Readex microfilm reader, a Densichron photoelectric receiver, and a Brown or GE recording potentiometer.

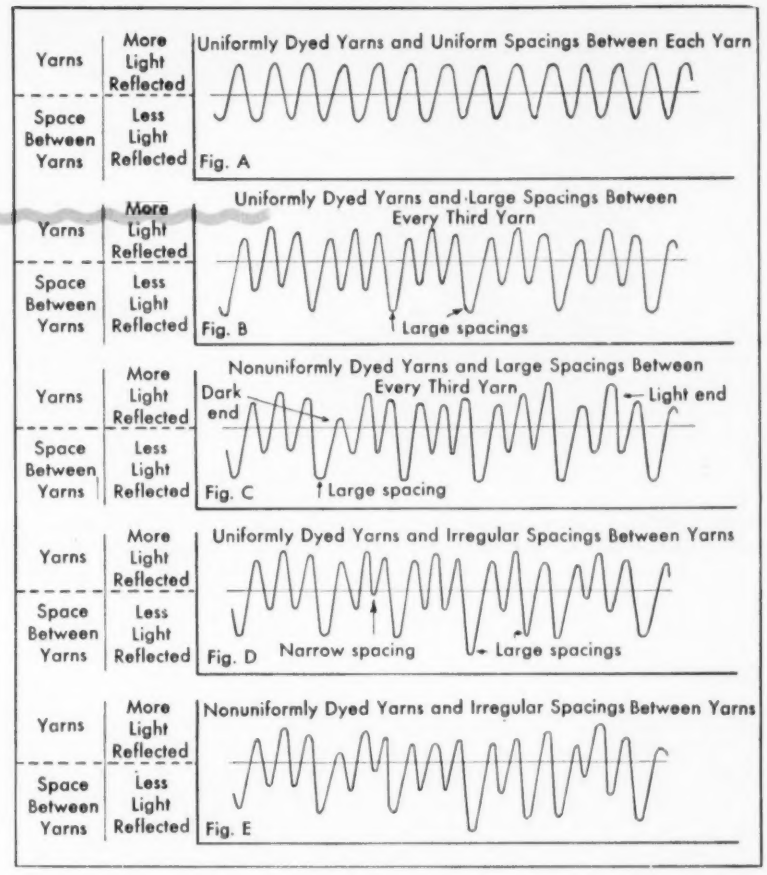
The microfilm reader enlarges the image reflected from its light source 12 to 18 times and focuses the image on the photocell, which is permanently mounted at the viewing port. The photocell is stationary; the fabric is moved mechanically (1 to 4 ins. per hr.) on the microfilm platform so that its image traverses the face plate of the photocell. (The Readex instrument is no longer commercially available, but any instrument with a similar optical system can be used).

The normal face cover of the photocell is replaced with a cover that has a 0.008-in.-wide and 1-in.-long slit, which permits scanning of about a quarter of the width of a 70-den. warp yarn. Light is changed into electrical impulses by the receiver, and the signals are fed to the recorder; a continuous chart record is made by the recorder at a speed of 6 ins. per min.

How To Use the Device

A 4x5-in. sample is first cut from the fabric. Loose warp yarns are removed until one yarn extends the length of the sample. This yarn serves as a reference point for later identification of other yarns. The sample is placed on a nonlustrous black surface under the glass positioning plate of the microfilm reader film carriage; the warp yarns of the fabric are carefully aligned parallel to the slit in front of the photocell.

Then the fabric holder is put in motion. As the fabric moves across the light beam, the intensities of light reflected from the warp yarns and from the spaces between warp yarns are recorded. Different colors read differently, and so require readjustment of the sensitivity of the Densichron receiver to obtain a readable trace on the recorder.



RELATIVE INTENSITIES of the light reflected by the yarn and by open spaces are produced on the chart record. These drawings show the relationship of the chart record to the fabric.

How To Interpret the Graphs

Yarn ends have a high light reflectance, and open spaces have a low reflectance; so differences in color are indicated by changes in the upper section of the continuous curve and differences in space openings are indicated by changes in the lower section. The basic chart patterns are shown in Figs. A through E:

Fig. A shows an ideal trace that would be obtained from uniformly dyed yarns and uniform spacings. The peaks or maximums represent light reflected from each yarn; the dips or minimums represent the very low amount of light reflected from spaces between the warp yarns.

Fig. B shows a theoretical trace from uniformly dyed yarns and large repeating spaces that would be found in a fabric woven with three ends per dent. These streaks would not be visible to the naked eye.

Fig. C is a trace similar to Fig. B but with unevenly dyed warp yarns. Some of the peaks are markedly lower than corresponding peaks in other dents and are therefore dark yarn ends. The peaks that are unusually high represent light ends.

Fig. D reverses the conditions of Fig. C. Here unusually large spaces between yarns show as deeper dips in the trace; narrow spaces show as more shallow dips.

Fig. E shows a combination of uneven dyeing and uneven spaces. Most commercial fabrics produce records similar to this one.

If the first complete warp yarn in the sample is used as a reference point, the exact location of individual streaks can be determined; this job is frequently difficult to do with the unaided eye.

In addition, the relative intensities of the types (yarn or space) of individual streaks can be found by measuring the numerical differences between the peak for the streak yarn and the peaks for the surrounding ends or the differences between the dip for streak space and the dips for the surrounding spaces. The Streakmeter values can be calibrated and converted into National Bureau of Standards units of color difference.

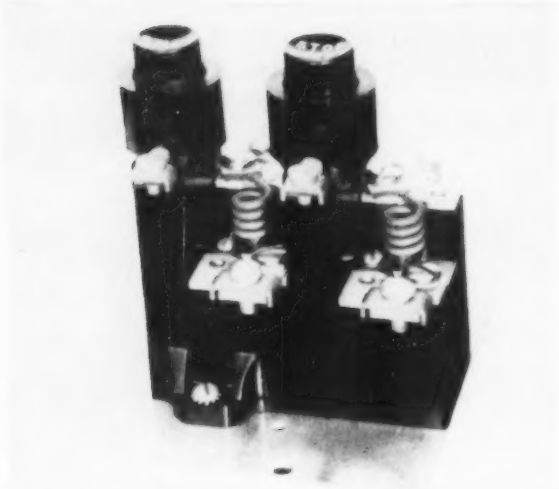
How To Rate Fabrics

From this information, numerical ratings for the over-all streakiness of a fabric can be found by calculating the standard deviation of the reflective differences of consecutive yarn ends, σe, and the standard deviation for the spaces, σs. With these values, the streak rating is calculated from the formula $\sqrt{\sigma e^2 + \sigma s^2}$. Also, the percentage of streakiness contributed by each type of streak is found from the formula $\frac{\sigma e^2 \times 100}{\sigma e^2 + \sigma s^2}$ for the ends and $\frac{\sigma s^2 \times 100}{\sigma e^2 + \sigma s^2}$ for the spaces.

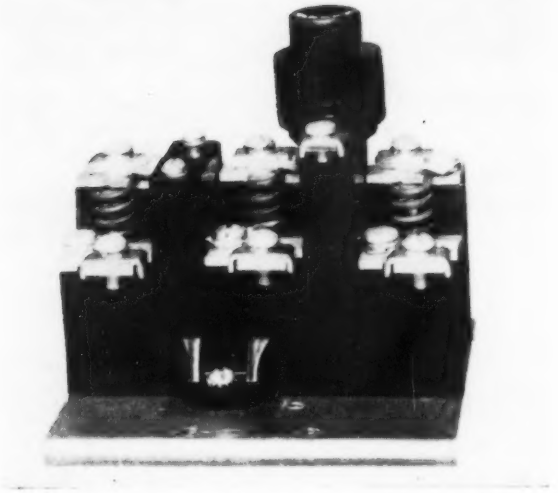
At least 200 yarn ends and open spaces are required to obtain reliable figures, and the analysis work is tedious. An integrator could be hooked to the photocell unit to give the standard deviation values directly.

Work with the Streakmeter has shown it to give reproducible values and to be in close agreement with visually standardized streakiness criteria.

Although the instrument is primarily for use with continuous-filament fabrics of plain construction, judicious sampling and revised procedures should produce useful data from complex constructions or even from staple-yarn fabrics.



TWO-ELEMENT overload relays with Start and Stop reset buttons normally close the contacts when the reset button is pushed.



THREE-ELEMENT overload relays have only one reset button. They should be used to adequately protect some large motors.

Proper OVERLOAD PROTECTION

Many overload protective devices furnish inadequate protection to electric motors because the devices are not the right type for the motor and wiring conditions. To provide safety against motor failures—

- **Select the overload relay for your own conditions**
- **Use modified relay designs for various motor installations**
- **Don't use overload relay units with automatic resets**
- **Use three-coil units to combat single-phase conditions**

By M. R. BRICE, Cutler-Hammer, Inc.

THE PURPOSE OF OVERLOAD PROTECTION for electric motors is to prevent damage to the motor as a result of overheating. When the load becomes too heavy for the motor, the motor overheats; and if the motor is not equipped with overload protection, it burns out.

Look for These Qualities In an Overload Relay

Overload protection must be dependable and ready to save your investment each time it is needed. In addition, it must not interfere with production unnecessarily. The device must be reasonable in cost compared to the risk it protects against.

An overload protective device must not act prematurely. It must be accurate, for available motor output is limited not by the motor itself but by the overload relay used to protect the motor. The motor can do no more work than the overload relay permits.

A motor with an inaccurate or poorly selected overload relay is like a boiler with an improperly set safety valve: either it may blow up or it will not do a full day's work.

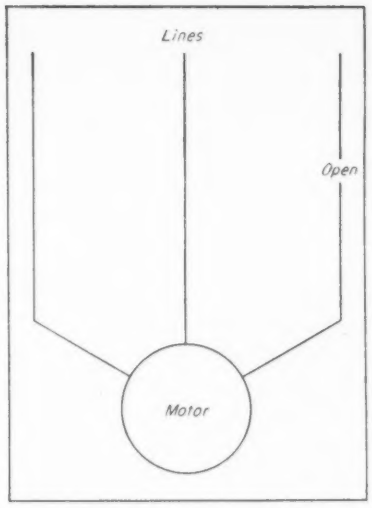
The current drawn by a motor is a convenient and accurate measure of the motor load and motor heating. The device usually used for overload protection is an overload relay provided as a part of the starter or controller.

The overload relay carries the motor current and is affected by that current. If a dangerous condition occurs, the relay operates, or trips, to open the control circuit of the starter and disconnect the motor from the line.

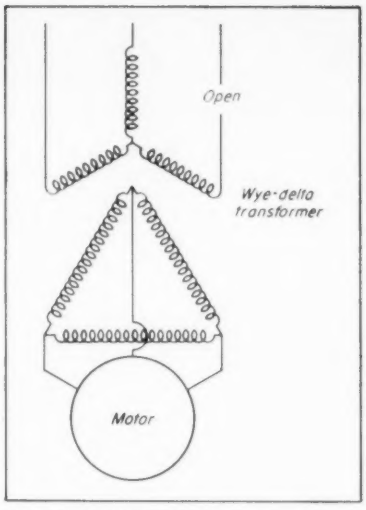
Overload protection now in general use for practically all a.c. motors and for most d.c. motors is the type that uses a thermal overload relay as part of the controller.

A motor can safely carry an appreciable overload for a short time. It can carry a smaller overload for a longer time, and it should be permitted to do so. Because intermittent overloads have a cumulative effect on motor heating, designers make their thermal overload relays with heat-storage characteristics similar to those of the motor but calibrated to allow the relays to always reach the trip-

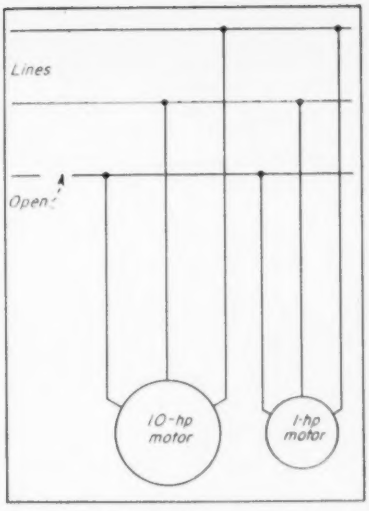
Based on a paper presented at an Atlanta meeting of the Textile Subcommittee, American Institute of Electrical Engineers.



TWO TRIP ELEMENTS are sufficient to protect a motor where a pure single-phase condition exists.



AN OPEN-PHASE FAULT in the primary of a wye-delta connected transformer is protected by a two-trip element.



THREE-TRIP ELEMENTS are required to adequately protect motors from an open-phase fault in this feeder-line arrangement.

Prevents Motor Failures

ping temperature before the motor reaches the danger temperature.

The Ambient Temperature Controls a Motor's Workload

A typical thermal overload relay in 25° C. ambient (surrounding air) temperature will trip on 600% rating in about 15 secs., 300% rating in about 1 min., and 150% rating in about 15 mins.

High-inertia applications such as cotton-card drives require slower tripping, which can be obtained with modified relay designs. A typical thermal-overload relay for card service will carry a 600% rating for 25 secs.

A few special applications such as small hermetically sealed air conditioners need special fast-tripping overload relays that will trip in 20 secs. on 300% of rated current.

The horsepower rating (and ampere rating) of a motor are based on the work the motor can do safely at an ambient temperature of 40° C., which is 104° F. By safely, we mean without reaching a temperature that would damage the motor insulation or shorten its life.

At lower temperatures more commonly met, a motor can safely deliver considerably more power—12% more at 25° C.; and for maximum production, it should be permitted to do so. At higher ambient temperatures, a motor can do less work.

The controller is normally installed in the same room with the motor and is subject to the same ambient temperature as the motor. The tripping characteristics of a properly designed thermal overload relay are then affected by room temperature exactly as the motor is affected. Relays of this type trip at 98° C., the danger temperature for the motor windings.

Motor Failure May Occur A Year After Overloading

Only two types of thermal relays are now in general use:

1. One uses the flexing of a bimettalic substance to operate a contact.

2. The other depends upon the melting of a solder or eutectic-alloy film to release a spring that operates the contacts.

Heater elements or heater coils are made in various ampere ratings. The increments between heater-element ratings for most relays is 10%; some run as high as 14%, and others provide ratings in 3% increments.

Thermal relays with small increments between heater-element ratings provide close selection to the actual motor rating and result in more work done by the motor safely.

In selecting heater coils use a table (published by the manufacturer) that lists the heater elements and the range of motor current ratings that are to be used.

Don't use oversize coils, particularly when a relay trips with no external evidence of motor heating. The life of motor insulation is shortened drastically as its operating temperature is increased. Actual motor failure may not occur until a year or more after a motor is overloaded.

Shortly after a thermal relay trips as a result of an overloaded motor, both the motor and the thermal relay are cool enough to restart the motor. The cause of the overload condition should be investigated and removed before the reset button on the controller is pushed to restore the over-

(*Continued on page 180*)

Design Roving Truck To Fit Your Needs

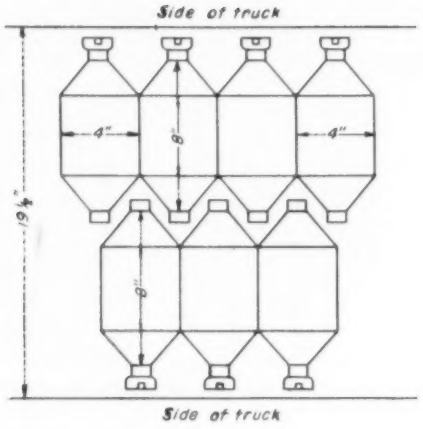


Fig. 1

WIDTH OF ROVING TRUCK is found by laying roving side by side and measuring the distance from end to end. Allow ½ in. on each side for packing room. A truck for 8x4-in. bobbins should be about 19½ ins. wide.

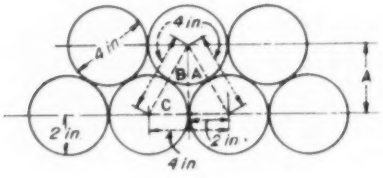


Fig. 2

HEIGHT OF ROVING TRUCK is found by calculating the spaces between bobbins and adding the spaces together plus the diameter of one full bobbin. The formula for finding the space between bobbins: $A = \sqrt{B^2 - C^2}$.

How To Handle ROVING

A roving man works his job efficiently if—

- **His trucks are designed for the job**
- **He knows how many bobbins each spinning frame requires per shift**
- **He works on a well-organized job**

By N. H. POMFRET
Provincial Institute of Textiles

A GOOD ROVING MAN seldom does any useless walking. He works efficiently because he knows how many bobbins each frame requires per shift, he has surplus roving in case of need, he keeps his equipment in good shape, and he pushes roving trucks that are engineered for his job.

The efficient laying up of roving at the spinning frame starts at the doffing of the roving frame. If the bobbins are just thrown into the doff truck, the time saved at the roving frame is more than lost in the spinning room. The disadvantages of operating without an engineered roving truck are several:

1. Stock comes in contact with dirty bobbin ends.
2. Bobbin rings get distorted.
3. Truck does not hold as many bobbins.
4. It takes longer for the spinning-room roving man to empty the trucks.

How To Design a Roving Truck

A roving truck should have sufficient capacity to hold the roving from one frame. If the trucks are too small, bobbins of rovings have to be laid over the rim, and they continually fall off in transit. Time and tempers are lost retrieving the roving, and there is a possibility of mixing different rovings.

On the other hand, trucks too large are a waste of money. They are heavy to push around, and they require more bending by the operators.

For a sample problem, suppose you need a truck to carry 132 8x4-in. roving. To build the truck you need to know the width, the length, and the depth.

Width: The width of the truck is found by laying several bobbins side by side as shown in Fig. 1. Point the bobbin ends toward the sides where they do the least damage. An allowance of ½ in. at each side is enough space for packing the bobbins easily but not enough space for the bobbins to become disarranged in transit. For an 8x4-in. bobbin, this distance is about 19½ ins.

Length: The length of the truck depends on the aisle turns and passageways the truck has to operate in. There is no easy formula for figuring the length; so let us suppose you decide on a 40-in. inside length.

Depth: The depth of the truck depends on how many layers are necessary to carry the 132 bobbins. With a length of 40 ins., 10 4-in. bobbins can be

(*Continued on page 216*)

Each new fiber presents problems to the dyer. When two or more fibers are blended, the finishing problems increase. Here are valuable tips on dyeing—

- **Blends of viscose and**
  - **Acrilan**
  - **Dacron**
  - **Dynel**
  - **Nylon**
  - **Orlon**
- **Blends of wool and**
  - **Acrilan**
  - **Dacron**
  - **Nylon**
  - **Orlon**
- **Blends of acetate and**
  - **Dynel**
  - **Orlon**

Tips on Dyeing 11 FIBER BLENDS

By **EDWARD SZLOSBERG,** Sandoz Chemical Works, Inc.

Dynel- and Dacron-Viscose Blends

The fiber most frequently used as a component for synthetic blends is viscose. Blends of viscose with other synthetic fibers have proved successful for a variety of fabrics.

The dyeing of these blends falls into two distinct categories:

1. When the other fiber can be dyed with acetate colors, it is possible to dye the blend by the one-bath method. Such is the case with Dacron- or Dynel-viscose blends. The former must be dyed with a suitable swelling agent, such as Velanol NB or TC, and selected acetate colors, while the viscose component is filled in with a normal range of direct colors with or without aftertreatment.

2. When a solid swelling agent such as orthophenyl phenol or benzoic acid is decided upon for Dacron, it is necessary to use a two-bath method whereby Dacron is dyed first at the boil and viscose cross-dyed at lower temperatures. When Dynel-viscose blends are dyed, a similar principle is employed, but it is not absolutely essential to use a swelling agent, since Dynel exhibits a direct affinity for acetate colors.

Orlon- and Acrilan-Viscose Blends

Matters were complicated considerably when viscose was blended with either Orlon or Acrilan, since Orlon has little affinity for acetate colors at conventional temperatures and Acrilan will produce full shades but with unsatisfactory fastness.

Now, in a two-bath method, the Orlon component is dyed with selected acid colors at the boil with cupric sulfate, with hydroxylammonium sulfate used as a reducing agent. The stain on the viscose is then soaped off, and the fiber is cross-dyed with selected direct colors at temperatures not exceeding 180° F., with Glauber's salt rather than common salt as an accelerating agent. Common salt must be avoided in the cross-dyeing because the acid colors on Orlon have a tendency to be stripped by the chloride ion.

It does not seem practical to dye this blend by the one-bath method because the drop in the pH value accompanying the addition of the reduced copper would cause the direct colors to be precipitated and retarded.

Blends of Acrilan-viscose raise another problem. In dyeing this blend, the cuprous ion is unnecessary because Acrilan lends itself easily to the conventional methods, the only requirement being the introduction of a strong mineral acid, such as sulfuric acid, into the dyebath.

Quantities of sulfuric acid in contact with viscose cause degradation to hydro-cellulose and eventual disintegration of the fiber. But the experience in some plants has been that it is quite safe to use up to 2% of acid at temperatures up to 200° F. with little damage to viscose, provided a thorough soaping is given at the completion of the dyeing process.

Here, as in the case of Orlon, it is not practical to use a one-bath method because of the low pH value. The one-bath method is preferable in cases of light shades when the amount of sulfuric acid necessary for the exhaustion of colors on Acrilan is small and the resultant pH value can be withstood by selected direct colors. In this case, both acid colors and direct colors are added to the dyebath at the start.

Nylon-Viscose Blends

Nylon-viscose blends are also found in some volume, particularly in hosiery and dress goods. One-bath and two-bath methods may be used for dyeing these blends.

A one-bath method can be used when the nylon is dyed with acetate colors and the viscose with selected direct colors. Some staining of nylon by direct colors will invariably occur, but this staining can be prevented by small additions of alkali.

When the fastness requirements are high, a two-bath method is resorted to where viscose is dyed with vat colors and nylon with acid colors.

Wool-Dacron Blends

When a blend of wool and Dacron is to be dyed in such a way that Dacron is to be left white, no difficulty is encountered, since a large majority of acid, chrome, or premetallized colors have no affinity for Dacron. In order to dye Dacron and leave the wool white, it is necessary to select acetate colors that will give the least staining of wool and to soap off the dyed material to remove any staining left on the wool component.

In dyeing solid shades, a one-bath method can be adopted with some success. Dacron is dyed with selected acetate colors and a swelling agent, such as Velanol NB or TC; and wool is filled in with neutral-dyeing acid

(*Continued on page 196*)

**Adapted from a paper delivered recently before the AATCC at Winston-Salem, N. C.*

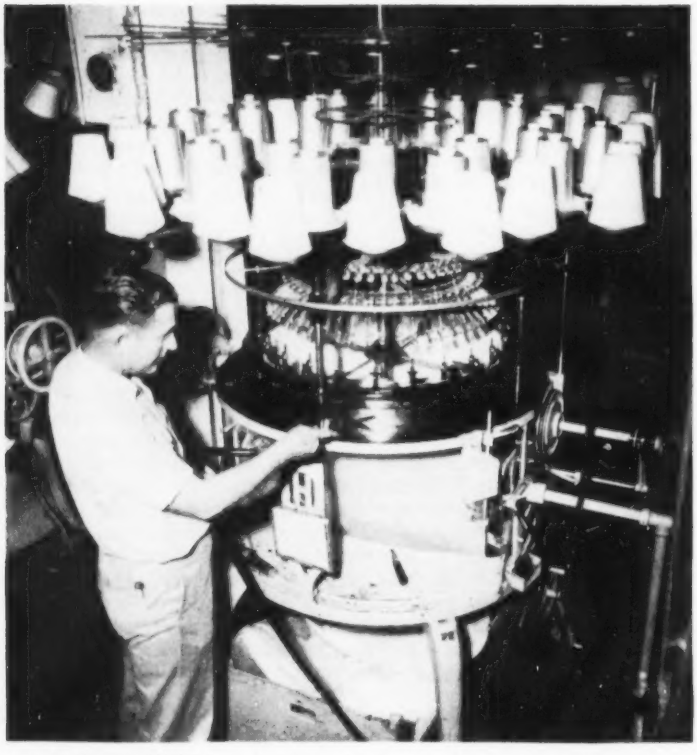
COVERED YARN BINS are located near the knitting machines and keep the yarn separated and clean.

High-Quality UNDERWEAR

Methods that pay off at Russell Mfg. Co. include:

- **Proper selection of yarns**
- **Preventive fixing**
- **Modern materials handling**
- **Convenient machinery layouts**

By E. DALTON WHITE
McGraw-Hill, Atlanta Bureau



LINT IS BLOWN AWAY from the knitting head, rather than into the needles and yarn. Fabric and machines are kept cleaner by this method.

Russell Mfg. Co., Alexander City, Ala., makes high-quality knitted fabric by (1) fixing responsibility for quality, (2) maintaining machines carefully, (3) inspecting systematically, (4) handling materials carefully, (5) keeping close liaison between knitting and spinning rooms.

Quality Fabric Starts With Good Yarn

The Russell mill has full control over the quality of its knitting yarn, for the mill produces its own. This yarn is made to specifications for each fabric construction.

There is close cooperation between the spinning and knitting departments. When a yarn does not knit well, the lot is returned to the yarn mill. Investigations are made to detect possible causes of the trouble, which may be traced back as far as the picker room.

To avoid too much twist in the yarn, which might cause the yarn to be lively and get out of control on the knitting machine or produce a harsh knit, Russell uses a 3.25 twist multiplier for fine yarns and a 2.75 TM for coarse knitting yarns.

When the yarn arrives from the spinning mill, it is stored in covered bins, located close to the knitting machines, to prevent the accumulation of lint on the cones, damage, and soiling and to keep the yarn in better condition.

Demands Up-to-Date Methods

Workloads Allow for Inspection

Knitters are well trained, and their responsibilities include machine lubrication, creeling, doffing, replacing needles, and marking fabric. Workloads are adjusted to provide ample time for frequent inspection of the fabric.

High-quality fabrics demand freedom from oil and grease spots. Although machine lubrication is recognized as very important, only sufficient lubricant is used to keep the moving parts running smoothly. Quality is further improved by blowing lint away from the machine rather than onto the yarn or fabric.

Close teamwork between the knitter and the fixer has reduced stoppages and seconds, and frequent inspection of the cloth has materially increased cloth quality. If a close inspection reveals the slightest change from the rigid standard, the knitter notifies the fixer immediately.

Preventive Maintenance Is Practiced

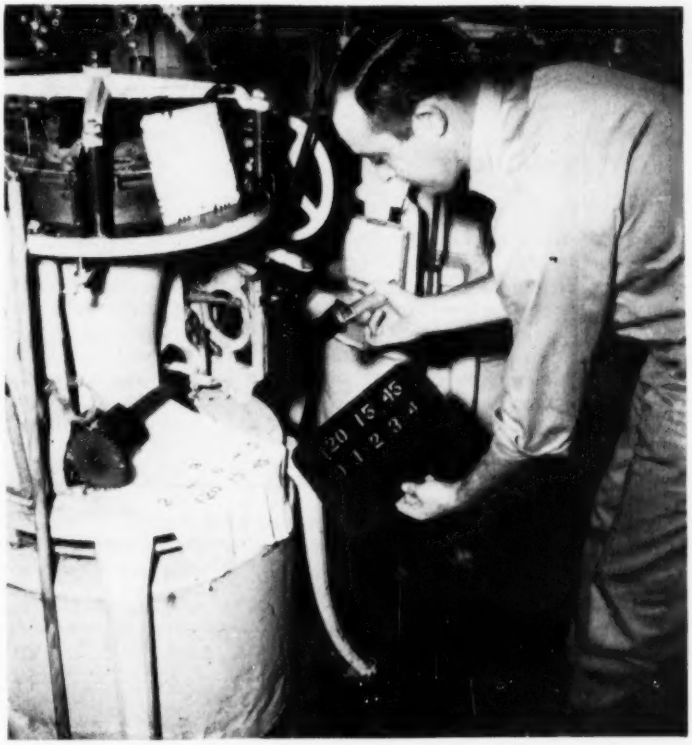
Immediate adjustment, however slight, has been found to prevent major trouble. This system has worked so well that it has not been necessary to set major-overhaul times. A machine is kept in production if it produces good fabrics and is not requiring too-frequent adjustments. When the decision to do a major overhaul job is made, however, a very thorough job is done.

Layout Reduces Handling

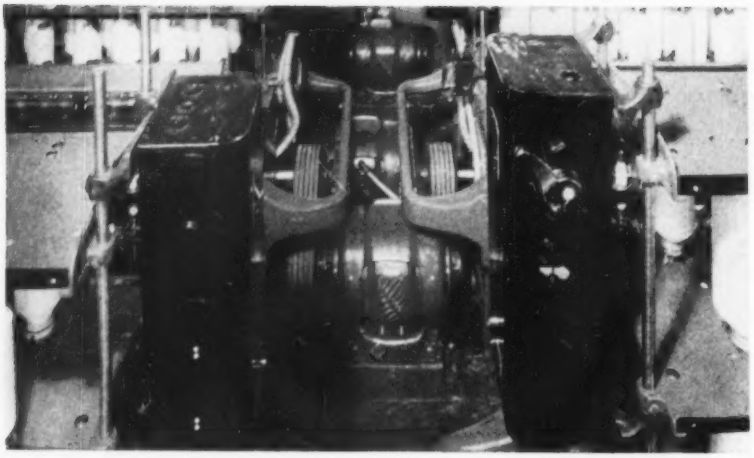
Installation of a reversing machine in the center of the knitting room saves time and eliminates storage and handling problems. The fabric is reversed as soon as it is removed from the knitting machine. The rolls are weighed and placed in a conveyor to be taken to the dyeing and finishing department on the floor above.

The convenient layout of the knitting room has done much to improve operating efficiency and job routine. The sequence of operations gives a smooth flow of materials and allows more time for the little details that add so much to quality production.

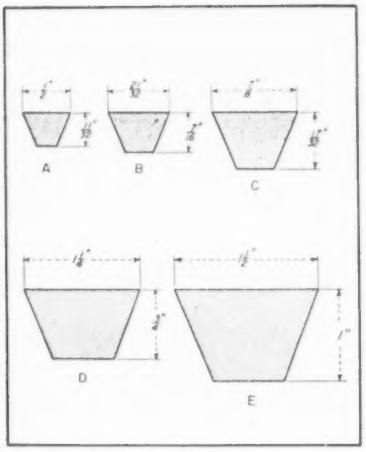
FABRIC QUALITY is double checked by Gene Smith, superintendent. Knitters inspect frequently and report any variation from standard.



EACH FABRIC ROLL is stenciled for easy identification. Numbers indicate fabric construction, order, roll number, and machine number.



FIVE V-BELTS are used to drive each of these spinning frames in a large Southern mill. Belt life can be lengthened and their performance improved by: (1) proper selection of belts to do a particular job, and (2) good installation and maintenance practices.



FIVE CROSS-SECTIONAL SIZES of V-belts are available as standard. The sketch shows the dimensions of each.

Select V-BELTS To Do a Specific Job

HIGHLIGHTS: Five sizes of V-belts are available in any length desired—A few simple calculations will tell you what cross section and length of belt and how many belts you need for a given installation.

By TYLER G. HICKS

V-BELTS HAVE WIDELY *supplanted* the older flat belts in mills because they require less space, maintain better speed ratios, start more smoothly, require less maintenance, and are easy on bearings. Since reliability and continuity of operation depend on proper application of V-belts, a good working knowledge of belt types, construction, and operating characteristics is useful.

Standard V-belts are made in five cross-sectional sizes, with each cross section being made in a variety of lengths to suit particular applications. Typical dimensions and other physical characteristics are summarized in Table I. Sizes and weights are somewhat approximate because they vary slightly from one manufacturer to another. Materials of construction also vary, but most modern V-belts consist of fabric and cords molded in rubber and covered with fabric.

Recommended cross sections for various motor horsepowers and speeds are listed in Table II. Since there is a most economical cross section for every mill application, Table II is handy to help in selecting belts. Cross sections in parentheses are not usually the most economical, but they are used where pulley dimensions make them desirable.

Table I -- Properties of V-Belts

Cross section	Size, outside widthxdepth, (ins.)	Wt. (lbs. per ft.)	Grooved pulley pitch dia. (ins.)	Flat pulley dia. (ins.)
A	33/64x9/32	0.06	3	17
B	11/16x13/32	0.106	5.5	24
C	15/16x9/16	0.20	9	42
D	1 5/16x3/4	0.40	13	52
E	1 19/32x29/32	0.60	21.5	62

Standard and Flat V-Drives

The term "standard V-belt drive" presumes use of a grooved pulley on both the driving and driven unit. When the larger-pulley diameter is several times that of the smaller, a grooved surface on the large pulley may not be necessary. The drive then consists of a grooved small pulley, a set of standard V-belts, and a large flat pulley. This type of drive is known as a "V-flat drive."

These drives are not quite so common as standard V-belt drives; and for such applications as spinning frames, dryers, cards, winders, and

warpers, standard V-belts are almost always used.

How To Select Belts

There are many instances where belts must be selected for new or existing mill equipment. In planning new drives, maintenance of worn equipment, and changes in power-transmission belt types, it is usually necessary to choose a set of belts for given operating conditions. Belt calculations involve only simple arithmetic, but the operating and atmospheric conditions sometimes encountered in mills require that the service conditions be most carefully considered.

For a typical selection problem to illustrate the methods generally used, see the end of this article.

The advantages of flat drives result from the lower cost of ungrooved pulleys and the ease with which an existing flat-belt drive can be transformed to a V-belt drive. V-belt drives are most practical when the speed ratio is at least three to one and the center distance is about equal to the diameter of the large flat pulley.

When these conditions prevail in mill drives, about the same number of V-belts are required as for two grooved pulleys. Although longer center distances may be used, the arc of contact on the larger pulley is decreased and the number of V-belts needed is increased.

Install Them Right

Selection of the proper belts is only the first step towards reliable operation. Correct installation and maintenance procedures are equally important. Many good belts have been ruined by crude installation methods and improper maintenance by careless fixers.

A minus allowance on shaft-center distances is necessary to permit belt installation without strain. Where a take-up (idler pulley) is used, a plus allowance for take-up must be provided.

Table VI lists the minimum allowances for installation and take-up. The values should never be decreased; otherwise, belt life may be considerably shortened. Pulleys should always be exactly in line and the shafts of driving and driven units parallel.

Problem. It is proposed to drive an opener at 700 rpm. through V-belts from a 5-hp., 1,150-rpm. motor. Center distance between beater and motor shafts is approximately 27 ins. Determine the belt cross section and length and the number of belts necessary for the drive.

Solution. Before the belt cross section can be chosen, the actual effective horsepower of the drive must be determined. Table III lists service factors based on average conditions.

In studying these service factors, it is seen that factors c, e, f, g, and i will probably apply.

These factors mean that continuous service and excess oil, dust, heat, and water might be encountered at the opener during belt operation. Summing the service factors and taking 50% of the result, as noted in Table III, 0.3 + 0.2 + 0.25 + 0.2 + 0.2 = 1.15/2 = 0.575, say 0.60. Therefore, service factor = 1.00 + 0.60 = 1.60.

Then, actual horsepower of the drive, taking probable operating conditions into consideration, is 1.6(5.0) = 8.0. From Table II, a *B* section is suitable for an 8-hp. drive.

The ratio of the driver to driven speed is 1150 to 700 = 1.64. From Table I, the minimum pitch diameter for a *B* section is 5.5 ins. Hence, the pitch diam-

Table II -- Recommended V-Belt Cross Sections

Horsepower transmitted	Motor speed (rpm.) 1,750	1,150	870	690	575	490	435
½	A	A	A	—	—	—	—
¾	A	A	A	—	—	—	—
1	A	A	A(B)	—	—	—	—
1½	A	A(B)	B(A)	—	—	—	—
2	A	A(B)	B	—	—	—	—
3	B(A)	B	B	—	—	—	—
5	B	B	B	—	—	—	—
7½	B	B	B	—	—	—	—
10	B	B	B(C)	—	—	—	—
15	B(C)	B(C)	C(B)	—	—	—	—
20	C(B)	C	C	C	—	—	—
25	C	C	C	C	D	—	—
30	C	C	C	D	D	—	—
40	C	C(D)	C(D)	D	D	—	—
50	C	C(D)	D(C)	D	D	E	E

Table III -- Service Factors for V-Belt Drives

Operating conditions	Service factors
a. Starting peaks in excess of motor rating and/or momentary running peaks in excess of motor rating	
1. 150% (of motor rating maximum)	0.20
2. 200%	0.50
3. 250%	0.80
b. Frequent starting and stopping	0.20
c. Continuous service (16 to 24 hrs. per day)	0.30
d. Pulsating driver (gas or Diesel engine)	0.20
e. Excess oil	0.20
f. Excess dirt, sand, or dust	0.25
g. Excess heat to 140° F., maximum	0.20
h. Excess heat to 200° F., maximum	0.40
i. Excess water (or other liquids that do not attack rubber or fabric)	0.20

Note: Where two or more of these conditions exist in any one drive, add the individual service factors and apply the following percentages:

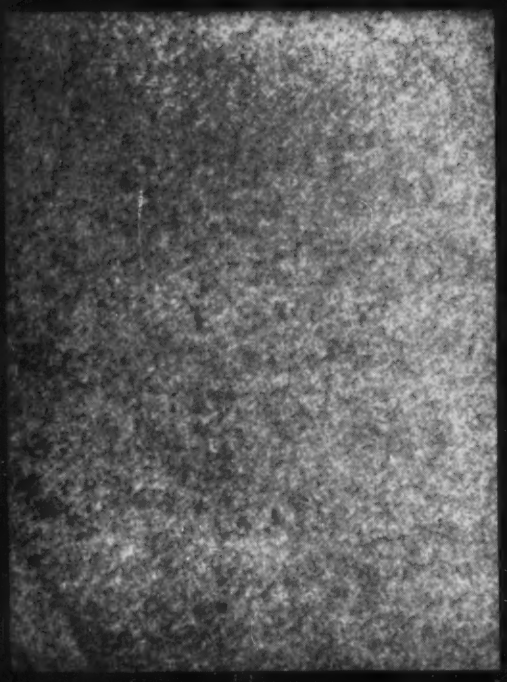
Two conditions—use 85% of the sum of the two figures.

Three conditions—use 70% of the sum of the three figures.

Four conditions—use 60% of the sum of the four figures.

Five conditions—use 50% of the sum of the five figures.

ORDINARY MACHINE OIL. Ultraviolet light proves that ordinary machine oil is hard to scour. Oil that remains in the textile prevents level dyeing.



SUNOTEX MACHINE OIL. Ultraviolet light proves scourability of Sunotex. This oil scours easily and completely, leaves no stain, permits level dyeing.

ULTRAVIOLET LIGHT PROVES SCOURABILITY OF SUNOTEX MACHINE OIL

These swatches were oil spotted: one with ordinary machine oil, the other with Sunotex. After scouring, they both *looked* clean. To make sure, both swatches were photographed under ultraviolet light. The swatch spotted with ordinary machine oil fluoresced brightly, showing that even though it looked clean, it was still badly spotted. The swatch spotted with Sunotex didn't fluoresce, proving it to be oil-free after scouring.

Here's proof of how Sunotex helps prevent spoiled goods and unlevel dyeing. It scours easily, leaves no stain, does not damage fabrics.

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Table IV -- Horsepower of A, B, C, D, and E Belts

	Motor sheave pitch dia. (ins.)	Belt velocity (ft. per min.) and horsepower							
		1,000	1,500	2,000	2,500	3,000	3,500	4,000	4,500
A	3.0	0.7	1.0	1.3	1.5	—	—	—	—
	3.4	0.8	1.1	1.5	1.7	2.0	—	—	—
	3.8	0.9	1.3	1.6	2.0	2.2	2.5	—	—
	4.2	0.9	1.4	1.8	2.1	2.4	2.7	2.8	—
	4.6	1.0	1.4	1.9	2.3	2.6	2.8	3.0	3.2
	5.0 and up	1.0	1.5	2.0	2.4	2.7	3.0	3.3	3.4
B	5.5	1.4	2.0	2.6	3.1	3.5	3.8	4.0	4.0
	5.8	1.5	2.1	2.8	3.3	3.8	4.1	4.4	4.4
	6.2	1.6	2.3	2.9	3.5	4.0	4.4	4.7	4.8
	6.6	1.7	2.4	3.1	3.7	4.3	4.7	5.0	5.1
	7.0 and up	1.8	2.5	3.2	3.9	4.5	4.9	5.3	5.4
C	9.0	2.8	4.2	5.5	6.8	7.6	8.4	9.1	—
	10.0	3.1	4.6	6.1	7.3	8.5	9.4	10.3	10.7
	11.0	3.4	5.0	6.5	8.0	9.2	10.3	11.3	11.8
	12.0 and up	3.6	5.3	7.0	8.5	9.8	11.0	12.2	12.7
D	13.0	5.1	7.5	9.7	11.6	13.3	14.6	15.6	—
	14.0	5.6	8.2	10.7	12.9	14.4	16.5	17.8	—
	15.0	6.1	9.0	11.7	14.1	16.3	18.1	19.6	20.3
	16.0	6.5	9.6	12.5	15.1	17.5	19.5	21.3	22.1
	17.0 and up	6.8	10.1	13.2	16.0	18.6	20.7	22.8	23.5
E	21.0	8.5	12.5	16.2	19.6	22.7	24.9	26.6	—
	22.0	9.0	13.2	17.2	20.8	24.0	26.6	28.5	—
	24.0	9.8	14.5	18.9	23.0	26.5	29.5	31.9	33.5
	26.0	10.5	15.6	20.3	24.7	28.6	32.0	34.7	39.7
	28.0 and up	11.1	16.5	21.6	26.3	30.5	34.2	37.2	39.5

NOTE: Belt velocities greater than 5,000 ft. per min. are not ordinarily used. For drives requiring belt velocities of 5000 ft. per min., or more, refer the case to the manufacturer.

Belt speed — 0.262dS

eter of the driven pulley, when the driver pulley has a 5.5-in. pitch diameter, is $5.5(1.64) = 9$ ins.

In other words, to find the driven-pulley diameter, multiply the driver diameter by the speed ratio of the pulleys.

Checking with manufacturer's tables of standard pulley sizes, it is seen that both the required diameters are available.

Belt Length

The length of each belt is found from:

$$L = 2K + 1.57(D + d) + \frac{(D - d)^2}{4K} \quad (1)$$

Where

L = belt-pitch length (in.)
D = pitch diameter of large pulley (in.)
d = pitch diameter of small pulley (in.)
K = center distance between shafts (in.)

For this drive:

$$L = 2(27) + 1.57(9 + 5.5) + \frac{(9 - 5.5)^2}{4(27)}$$

$L = 76.86$ ins., closely

The nearest stock size of V-belt, from manufacturer's tables, is 78.1 ins.

Distance Between Shaft Centers

The center distance necessary with a 78.1-in. belt and the pulley dimensions

(Continued on page 230)

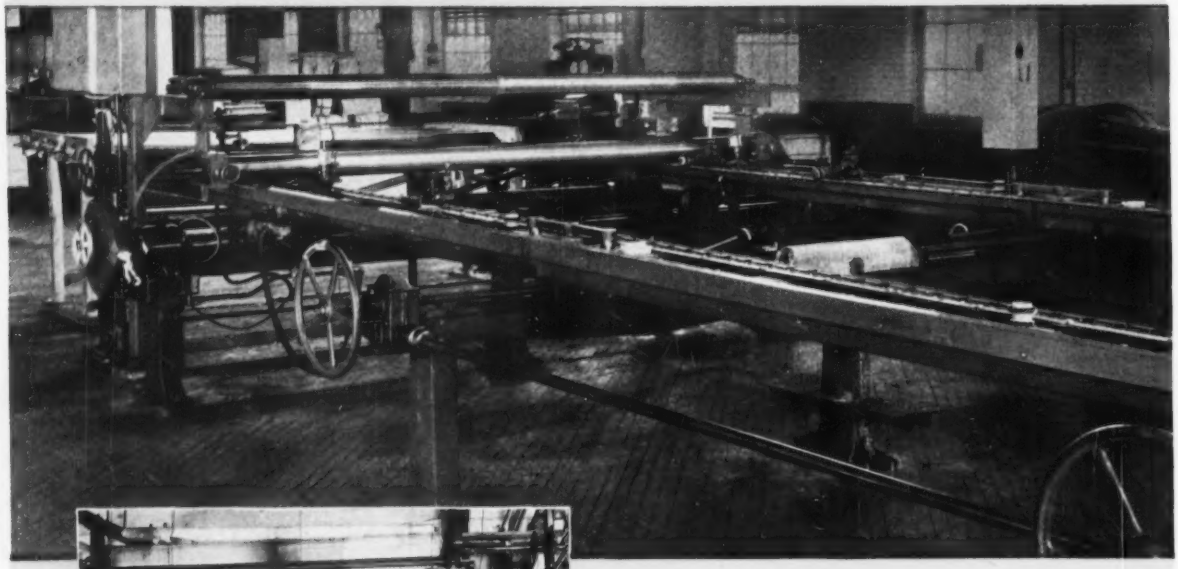
Table V -- Arc of Contact Correction Factor

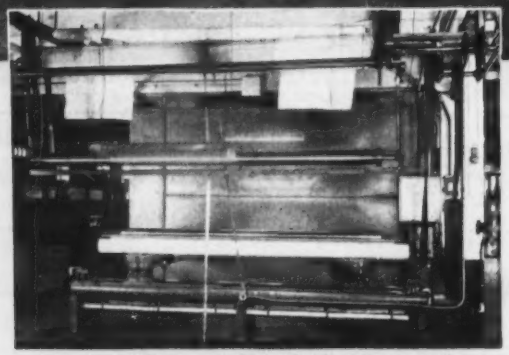
Arc	180°	170°	160°	150°	140°	130°	120°	110°
Factor	1.00	0.98	0.95	0.92	0.89	0.86	0.83	0.79

Table VI -- Installation and Take-Up Adjustments

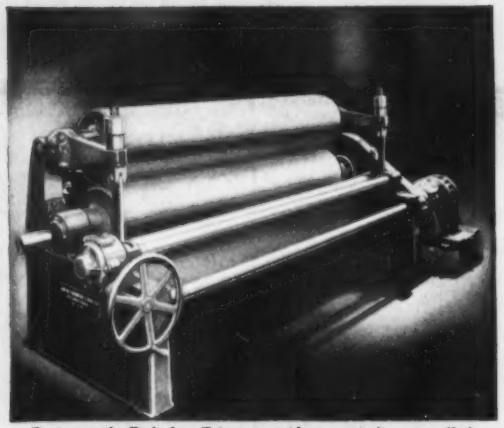
Nominal length of V-belt (ins.)	Minimum allowance below standard center distance for installation (ins.)					Minimum allowance above standard center distance for take-up (ins.) All cross sections
	A	B	C	D	E	
26 to 37	¾	1	—	—	—	1
37 to 59	¾	1	1½	—	—	1½
60 to 89	¾	1¼	1½	—	—	2
90 to 119	1	1¼	1½	—	—	2½
120 to 157	1	1¼	1½	2	—	3
158 to 194	—	1¼	2	2	2½	3½
195 to 239	—	1½	2	2	2½	4
240 to 269	—	—	2	2½	2½	4½
270 to 329	—	—	2	2½	3	5
330 to 419	—	—	2	2½	3	6
420 and above	—	—	—	3	3½	1.5% of length in feet

New Tricot Finishing Tenter





Two views of Butterworth Tricot Finishing Tenter. Delivery end, just above, offers choice of folder or wind-up arrangement.



Butterworth Pad for Tricot provides precisely controlled fabric impregnation. For micro or air pressure.

For High Temperature Drying and Curing

The latest type Butterworth Finishing Tenter permits high temperature drying and curing of tricot fabrics in one operation. This new machine is so designed that it is free to expand longitudinally and laterally.

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Drive or delivery end of machine equipped with spiral bevel gears. Vertical driving shafts mounted in tapered roller bearings. Main drive shaft mounted in ball bearings. Spiral bevel gear assembly enclosed in oil-tight casing and mounted on double cross rails supported by three heavy cast iron delivery stands. Anti-friction bearings throughout.

Built to conform with latest type drying and curing tenter housings of standard dryer manufacturers. If you want full details on this Butterworth Tricot Finishing Tenter, call for a Butterworth Representative today.

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If You Run a Lot of Yarn Numbers—

A Flow Chart Can Simplify Your SPINNING Organizations

▶A sales-yarn mill used this flow chart to standardize its sliver and roving. A new yarn number will usually fit one of the standard organizations. This mill spins 10s to 88s from one card sliver, three slubber rovings, and seven intermediate-frame rovings.

By E. H. HELLIWELL

Contributing Editor, TEXTILE WORLD

A SUPERINTENDENT OF A COTTON sales-yarn mill has developed a simple chart to show his organization for every yarn number from sliver to yarn. When an order for a new yarn number is received, the mill can tell at a glance how the new number will fit into the production organization.

The mill spins 10s to 88s; so new numbers usually fit somewhere on the chart. On some orders, a choice between organizations is possible. If a choice is possible, the roving records are checked to see if a surplus of roving is available for either choice; and the organization with the larger supply of roving is selected. Open spaces can be left on the chart to accommodate the new numbers.

Rovings Were Reduced

After the chart was prepared, the superintendent saw that some of the in-between rovings could be eliminated. Only seven hanks of roving are now made at this mill (43 yarn numbers were listed on the original chart).

Only one sliver—55 gr.—is made for the entire range of yarn numbers, and three long-draft slubber sizes are run—1.00, 1.50, and 2.00 hk. From these slubber hanks, the mill makes all of the roving numbers. Some of the 2.00-hk. slubber roving is spun directly into the coarser yarn numbers.

Excessive Draft Avoided

The frame draft of each roving and yarn process is shown on the chart, and this easy reference helps to prevent excessive draft. This mill believes that a more-uniform yarn is made if drafts are kept within conservative limits. Double roving is used in the spinning creels to insure high quality and uniformity.

Three standard twist multipliers are used: 3.50 for filling yarn (F on chart), 4.75 for warp yarn (W on chart), and 3.00 for hosiery yarn (H on chart). Listing the twist multiplier for each yarn number keeps each order separate according to twist, stock, and yarn number. This listing helps to avoid errors in processing and shipping.

Five stocks are used, and the stock listing for each yarn number helps to keep the stocks in the proper channels. The standard roving organizations are used for all of the stocks. This practice reduces the number of hank rovings and simplifies the identification of stock in process.

Cotton-Yarn Chart

Carding (grs.)	Slubbing Hank	Slubbing Draft	Roving Hank	Roving Draft	Spinning Yarn No.	Spinning Draft	Spinning Twist	Spinning Stock
55	2.00	13.2	8.00	8.0	74	18.5	F	1C
					80	20.0	F	1C
					88	22.0	F	1C
			7.00	7.0	70	20.0	F	1C
					65	18.5	F	3C
					20	20.0	W	4C
					14	14.0	F	4C
					12	12.0	H	4C
					10	10.0	H	4C
			6.00	6.0	66	20.0	W	3C
					54	18.0	F	3K
	1.50	9.9	5.00	6.7	50	20.0	W	3C
					45	18.0	F	3C
			4.00	5.3	43	21.5	F	4C
					40	20.0	W	4C
					36	18.0	W	4K
	1.00	6.6	3.00	6.0	32	21.3	F	4C
					28	18.5	W	4K
					25	16.6	W	4K
			2.50	5.0	25	18.5	W	3C
					20	16.0	H	4K
					18	18.0	H	4C

THIS CHART shows the different organizations run at a sales-yarn mill. A new yarn number can usually be fitted into one of the organizations to keep the roving and slubber hanks to a standard number. The same card sliver is used for the entire range of numbers.

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With a network of 15 strategically located plants Ryerson brings quality steel quickly to your door. Although some stocks are currently unbalanced from a size standpoint, when you need steel—any kind or quantity—call the Ryerson plant nearest you and we will do our best to meet your every need.

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STAINLESS—Allegheny bars, plates, sheets, tubes, etc.
BABBITT—Five types, also Ryertex plastic bearings
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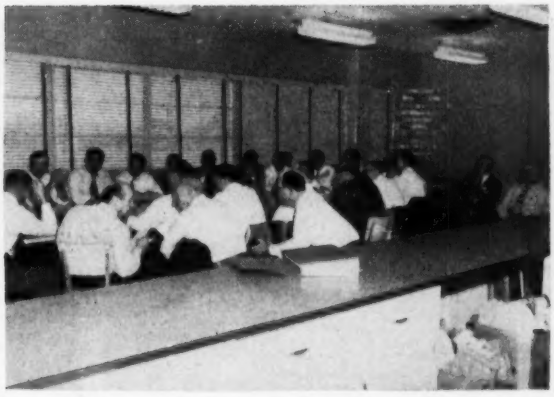
THE LUNCH ROOM serves as a smoking room as well as a place to eat. It is open at all times. Ten tables are enough because the plant doesn't have standard hours for meals; workers don't pour into this room at the sound of a bell.



CONVERTED into a meeting room, the lunch room plays host to a technical discussion at a meeting of the Underwear Manufacturing Executives Association. The visitors were served lunch on paper plates. The conversion took less than 10 mins.

Flexible LUNCH ROOM Serves Tricot Knitting Mill

▶ Here is a lunch room that seats 40 for lunch and doubles as a smoking and meeting room. A caterer (one of the knitters) supplies the service; and the mill gets no profit, no rent, few worries.

By **THOMAS B. WINSTON,** Assistant Editor, TEXTILE WORLD

FLEXIBILITY IS THE MAIN FEATURE of the lunch room at the Fountain Inn, S. C., tricot plant of Julius Kayser & Co. The room has 10 tables and a cafeteria-style counter and serves as the plant smoking room as well as the lunch room. The food service is provided on a caterer's basis by one of the knitters in the plant, and the company gets no profit, no rent, and few worries. With a new $3-million plant to get into full production and with workers new to the textile industry, the management prefers to devote its full attention to manufacturing problems.

The lunch room is located at the front of the plant. This location is convenient for employees coming to work early and gives an employee a complete change from the operating floor when he takes a break.

Facilities Were Expanded

The room was part of the plant design and has the same humidifying system, sprinkler system, and lighting as the rest of the plant. The room was built with an outlet for a canopy and steam exhaust to allow a cooking stove to be installed.

The first caterer who supplied the food service served only soups and sandwiches. With this setup, the lunch room served only about 30 people at lunch and 25 to 30 people in the evening. The primary use of the lunch room was as a place to eat rather than as a place to get something to eat.

This service proved inadequate; so arrangements were made with David Rogers, a tricot knitter with restaurant experience, to supply a more complete service. Hotpoint grill and frying units and a canopy were installed, and the lunch room was ready to operate as a short-order restaurant. Mr. Rogers attends to his lunch-room business before and after his first-shift work as a tricot knitter.

Now, the lunch room feeds about 125 of the 170 employees. Hamburgers with lettuce and tomato seem to be the staple diet at Fountain Inn; but the grill also serves steaks, fried chicken and shrimp, and bacon and eggs. Mr. Rogers will serve any food requested that the facilities will handle.

Lunch Times Are Flexible

The hours of the lunch room are 5 a.m. to 1:30 p.m. and 5 p. m. to 8:30 p.m. The girls from the knitting room start coming in around 10 a. m., and the place is filled by 12. The working force at Fountain Inn is still small enough to manage without specific lunch or rest periods. When a knitter leaves her machine, she just gets the supervisor to take over her machines while she is gone. (The tricot machines cannot, of course, run unattended, because they have no stop motions.) The plant is running three shifts on warping and knitting, two shifts on fabric examination, one shift for shipping, and two shifts on dyeing and finishing; so the 170 workers are distributed around the clock.

The lunch room is available at all hours as a rest-period room. The room is used a lot for this purpose since no facilities for smoking are available on the operating floor.

For special occasions, the lunch room can be quickly converted into a conference room by pulling the tables together.

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Exploring

The Textile Community

Child-Health Protection Helps Community Morale

▶ Dan River's clinic for youngsters up to school age is proving the value of the ounce of prevention. Here's a project other mills could adopt for good results at small cost.

By MILDRED BARNWELL ANDREWS

One of Dan River Mill's most engaging activities is its Well-Baby Station, an efficient, busy "preventorium," run on a clinic-visit basis, for babies and preschool-age children of the mill community.

The station was opened in October, 1951, in cooperation with a plan for similar clinics operated under the auspices of the Danville, Va., Health Department. Quarters for the station were set up at the mill's recreation center and were equipped for medical examination and consultation by an independent organization devoted to the well-being of mill employees and their families.

The station dispenses advice and guidance on child care every Tuesday. Its staff is composed of a trained nurse from the City Health Department and a pediatrician of Danville who is paid by the State Department of Health for the station work. The two are assisted by a social worker who is on the staff of Dan River's Employee Welfare Association.

Keeping Babies Well

The objectives of the Well-Baby Station are to find any health defects and to correct them before they become serious, to provide immunization against childhood diseases, and to establish a pattern by which mothers can keep their children in good health. It teaches through counseling.

Babies and children up to the school-age bracket are given health check-ups. If one is found to be ill, the family physician takes over for treatment and cure. If any are found to be undernourished, underweight, overweight, or anemic, special diets are set up and periodic rechecks with the clinic advised. Tonsilectomies and other operations are advised when they would eliminate a contributing cause to a child's lack of complete health.

Cases Are Followed Up

It is a practice of the station staff members to follow up on their cases to see that suggested corrections are being made. If necessary treatment is more expensive than the family's budget allows, the staff serves as liaison agent between the family and civic organizations that have established special funds for particular diseases. This contact service often takes a heavy burden of worry from the shoulders of anxious parents.

Psychologically important, too, is the constant reminder of the fundamental structure for happiness and healthful well-being. Framed and hung where all may see it, is a picture of a young mother holding her baby. The accompanying placard says, "Give your children love and affection to help their emotional growth and to develop sound mental health and attitudes."

In its brief lifetime, the Well-Baby Station has rendered service to nearly 300 children. This is a small percentage of the children in the area, but as the station's full purpose of teaching child care to mothers has become better understood, interest in the activity has accelerated. Although set up primarily for employees of Dan River, the clinic is open to all who need it. It performs a function that few towns in textile areas have.

The Whole Community Benefits

There's no tangible way to measure the psychological benefit or morale uplift among Dan River's employees as a direct result of the station's work. But, as the young pediatrician summed it up, "If we keep babies well, everybody benefits. Parents will save on doctor's bills; doctors will be less burdened with periodic childhood-disease epidemics; youngsters will grow and develop unhampered by childhood illnesses."

A young mother put it differently. She said, "Many of us rear children and work in the mill. All of us are wives of men who work in the mill. It's much easier to be effi-

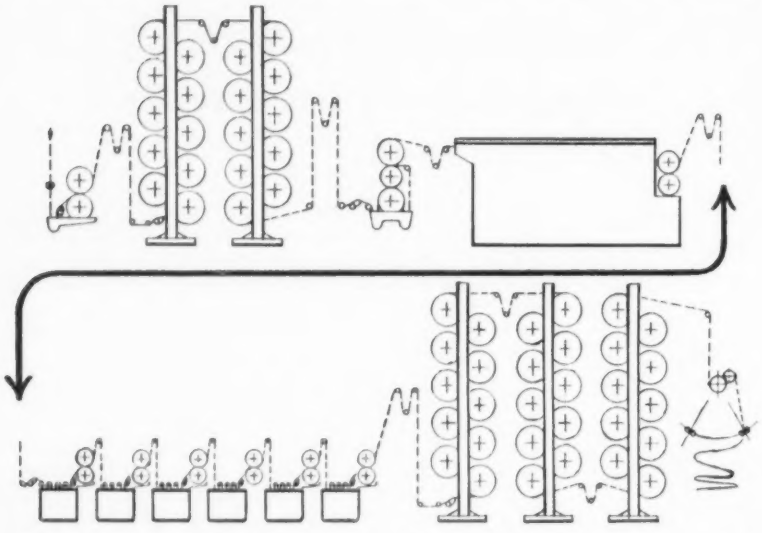
(Continued on page 194)

THIS BABY is among the 300 children who have been served by Dan River Mills' Well-Baby Station. Mrs. Carrie Casteen and Dr. W. L. Sager make the check for any symptoms of disease.

(*Advertisement*)

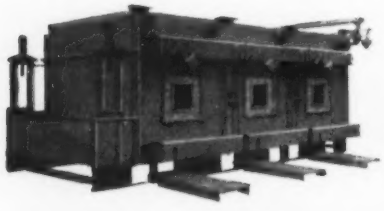
Cook P-N STEAM-PAD DYE RANGE

For All Fabrics and Warp Dyeing



We now have in operation ranges of from 50" to 110" face on cotton, rayon, acetates, corduroys, wool blends, etc. From our own shops we can supply modified or complete ranges to fit your requirements.

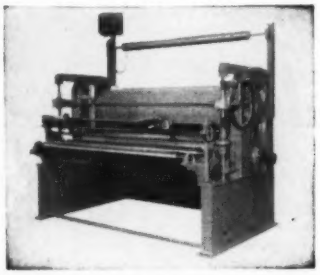
COOK Internal Tension Control (Patent Pending) makes possible successful operation of any size Ager



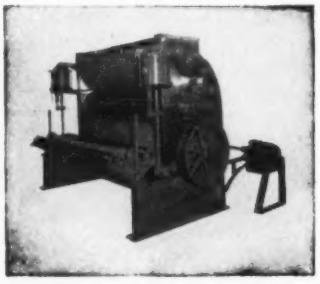
Our latest addition to the COOK Steam-Pad Dye Range is an Ager (5623–1) with *automatic internal tension control* (Pat. Pend.) which permits processing of even fine rayons without damage. This machine has an entrance seal which really seals, a steam-heated ceiling which really eliminates drips and provides uniformity of steam conditions. Many millions of yards of broadcloths, corduroys, work clothes, wide sheeting, rayon dress goods and even wool blankets have been processed through COOK Steamers. From the very beginning of the Steam-Pad Dyeing Process, COOK has played an important role in its successful development. Individually or as a complete range the representative machines shown here can be relied upon to produce a maximum amount of goods per dollar invested.

All COOK machinery is fabricated in our own shops allowing design flexibility *without* premium cost. Stainless steel fabrication eliminates broken castings and factory-made repair parts. All machines are guaranteed to perform as specified. Your request for information will receive prompt attention.

COOK Continuous Desizing Ager (4860-1) provides a uniformly saturated atmosphere and handles the material without wrinkling or excessive tension. Smooth flow with COOK Automatic Tension Control (Pat. Pend.). Entrance and exit steam seals which really do seal. Made in floor or ceiling type. Also available as combination Desizing and Dyeing Steamer.



2 Roll Padder (5602-2) Sturdy box-type frame, fool-proof pressure control and reliability make this padder increasingly popular where absolutely level padding is required. The lever-set pressure control is greatly improved to eliminate any binding and includes a new design roll separator. In 5, 10, or 15-ton capacity and any desired width.



3 Roll Padder (2947-1) Pneumatic pressure control with latest air cylinder design provides uniform and accurate pressure on each side. Single or dual control panel. Nip roll designs engineered to eliminate deflection. Rolls mounted in self-aligning spherical bearings. In 5, 10, or 15-ton capacity with infinitely adjustable pressures. Any desired combination of stainless steel and rubber covered rolls.

COOK-P & N MACHINE CO., INC., 365 Dorchester Ave., Boston 27, Mass.

For more information, write direct or use Reader Service post card.

Pointers FOR SUPERVISORS

A New Approach to Training In Leadership and Human Relations

▶ Experience is proving that too many training programs for supervisors are based on some questionable assumptions. Result: Management is beginning to adopt a more realistic view of how successful leaders can be trained.

By MACON P. MILLER
Director, Industrial and Public Relations, Fieldcrest Mills

THOSE FOREMEN who often have genuine success in human relations must be greatly perturbed, or amused, by some of the writing and training currently found in leadership or human-relations programs.

In spite of the mounting evidence of futility, foremen are still being subjected to so-called training based on assumptions or principles that are at least questionable. Here are a few examples of these assumptions:

1. A supervisor can accurately analyze himself to determine what he needs to improve in.
2. There are certain characteristics peculiar to leaders, and supervisors can be trained to possess more of these characteristics.
3. There are certain techniques or gimmicks that will almost invariably work in the handling of people.
4. Foremen can put the principles of human behavior and human relations to use once these mysteries are revealed to them.

It's Not As Easy As It Sounds

How easy it all sounds. A supervisor need only decide that he needs a little more initiative, tact, dominance, or what not; acquire training to become thus and so; study up on "what makes people tick"; learn a few slogans or maxims; and remember always to call his men by their first name, ask about the little woman, pat Joe on the back when he deserves it, reprimand him in private, etc., etc. And, as every supervisor has been told a thousand times, he must "sell" himself to someone or "sell" his employees on something.

Of course, much of this is sheer bunkum. "Leadership" or "human relations" or whatever it is a successful foreman practices is not something that can be learned easily. Indeed, if it can be learned at all, it's a process somewhat different from gaining knowledge or acquiring a motor skill.

The Other Side of the Question

Let's take another look at some of our premises to see what points of view can be offered in rebuttal.

1. Self-analysis is a difficult task. A supervisor is very unlikely to give an accurate and discerning evaluation of his own job strengths and weaknesses. There is a much better chance of accuracy and objectivity if someone else does the analyzing. If a foreman has genuine insight into his own weaknesses, he is in a better position to cure them. However, he needs some help in seeing himself clearly.

2. The idea that there is a general human type called "leader" with a definite group of characteristics is not standing up very well under the scrutiny it is now receiving. A current point of view is that leadership is situational: that is, a leader is one who has the leadership characteristics or qualities required by the particular situation. A successful leader in one situation may not be a successful leader or a leader at all in another situation. Thus, an infantry sergeant is not necessarily a good industrial supervisor.

The Situation Determines the Approach

Foremen, of course, are well aware of the differing demands of the situation they handle. They know that the "democratic" approach is appropriate to some situations or problems and the "autocratic" approach is better applied in others.

There appears, therefore, to be little justification for setting up general leadership characteristics and trying to mold our foreman into the "leader" stereotype. Many of these characteristics are little affected by training and are, in any case, not pertinent to the supervisory job.

The basic training must be directed at improving the supervisor's handling of situations that are relevant to his job.

3. The rote learning and even the understanding of human-relations principles and techniques will avail us nothing unless we put them into effective use. That is the rub.

We are told, for example, to "get all the facts" and "put yourself in the other man's shoes."

How Do You Get All the Facts?

Getting the facts is not simply a matter of picking up black marbles and letting the white ones lie. The foreman may deal with some "absolute" facts upon which everyone agrees. But in most cases, he is laboring in that foggy area where facts and interpretations are inseparable.

At this point the advice to "put yourself into the other man's shoes" is very sound. Unless we do this we're hard put to understand the other fellow's interpretation of the "facts." Unfortunately, people differ in the extent to which they can put themselves into someone else's boots. All the urging in the world will not help the fellow who can't do it.

We are gradually, therefore, getting around to this

(*Continued on page* 180)

Alemite "Friction Fighters"

save $2000 a year for steel company!

...add 30 minutes' operating time daily, end bearing failures and lubricating hazards

A mammoth traveling crane carrying tons of steel making constant stops and quick returns. Here—friction's wear and tear posed a costly problem in bearing replacement. Shutdowns were frequent. Delays cut into operating time.

To end this problem once and for all—plant engineers called in an Alemite "Friction-Fighting" specialist. Specific requirements were discussed in detail. Past difficulties were reviewed. Recommendations were made, and an Alemite Mechanized Lubrication System was installed.

This action brought immediate four-way savings: Eliminating lubrication down-time added 30 minutes daily productive use of the crane—time worth $9 a day, $2000 per year. 60% less grease was used. Expensive bearing replacements were eliminated. Also, the 60 foot climb to lubricate out-of-the-way bearings in dangerous locations was eliminated.

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☐ Include Facts on "Oil-Mist"—the amazing new system that atomizes oil, circulates it to bearings under pressure.

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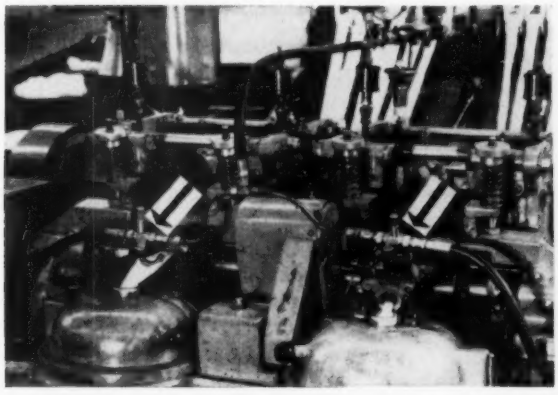
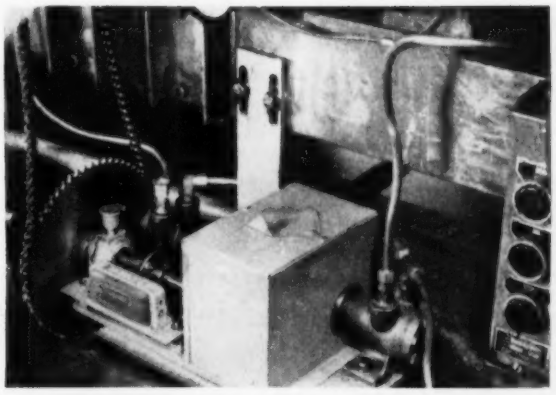
TEXTILE Equipment NEWS

Spraying Unit Developed For Pin-Reducer Processing



SPRAY HEADS (arrows) are located just above coiler heads. Liquid enters the two tubes from overhead supply line from the rear, is forced by air pressure into spray, and is distributed evenly over the sliver going through.



CHAIN, driven from the machine operation, drives the two pumps that force the liquid into the lines leading to the nozzles at the coiler heads. The pumps and the gear box are both mounted on the back of the frame.

A duplex metering pump and set of controlled-spray applicators for use on pin drafters and gill reducers were recently developed by Bachmann Uxbridge Worsted Corp., Uxbridge, Mass., and are now available from Bullard Clark Co., E. H. Jacobs Northern Div., Danielson, Conn., and Southern Div., Charlotte, N. C. The system is an improved way of applying oil, tints, or moisture in controlled amounts to fibers in process.

The spray is applied directly above each coiler head.

Uniform Application

Filtered liquid is supplied from a bottle mounted on its own floor stanchion, through two metering pumps driven by a nonslip chain drive operating from the pin-reducing machine. Spray nozzles, using low-pressure air, are mounted behind the drafting area or in special housings above the coiler heads. The pumps start and stop with the machine to eliminate dripping. Automatic air control is also available.

Crank and collecting tunnels are provided to replace the spray heads in cleaning the lines when tints are changed.

The enclosed front-end spray housings include stop motions for both too taut and too slack fiber conditions, and a liquid indicator or guard.

The pump assembly permits 80 gear-ratio changes, which provide approximately 5% step-ups in rate of application.

Special accessories for operation with gill boxes, cotton drawing frames, cards, and other processing units are also available.

Circle T-1 on Reader-Service Card

56-Gauge Raschel Knitter Has Five Guide Bars

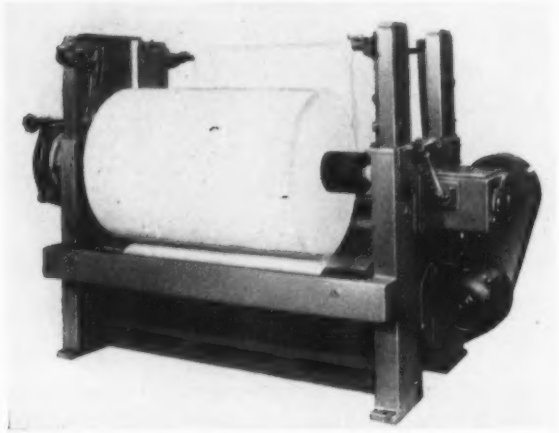
A new raschel knitter of 56 gauge (equaling 28 needles per inch), made with up to five guide bars and equipped to take 21-in. as well as 14-in. flange-diameter beams, is announced by Robert Reiner, Inc., Gregory Ave., Weehawken, N. J. The machine features open-type cans and is especially suitable for knitting of netting and power net.

If only two bars are used, the production speed ranges in the neighborhood of 400 to 425 stitches per minute; and on four-bar power fabric, 350 to 400 stitches per minute. In view of the fine gauge, the knitter reaches the speed of a three-bar tricot machine of the same number of needles per inch.

The unit can also be used for knitting elastic fabrics at high speeds.

Circle T-2 on Reader-Service Card

Dyemaster Jig Gives Constant Cloth Speed and Tension



BATCH ROLLS 34 in. in diameter permit high production on this dye jig that is of vibrationless operation.

A new American dye jig, featuring relatively constant cloth speed and controlled constant tension, has been announced by Van Vlaanderen Machine Co., 370 Straight St., Paterson, N. J. The new unit, called the Dyemaster, is claimed to have great versatility. Cloth tension is controllable from virtual tensionlessness for sheers to full tension for ducks and similar materials.

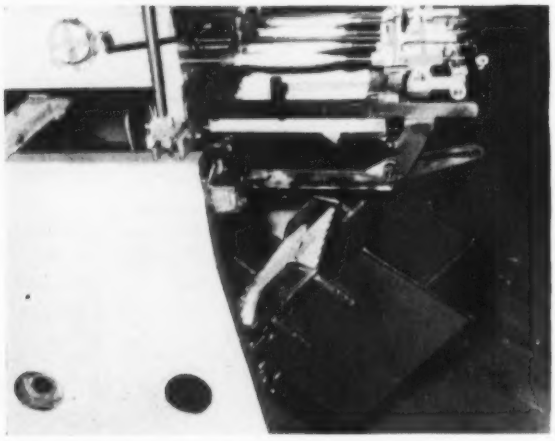
Stopping, starting, reversing, and the number of passages of the fabric through the dye bath can be preset and automatically controlled; so the desired uniformity in dyeing is assured. Thirty-four-inch batch rolls permit higher production from this jig than is possible from smaller-diameter-roll units.

Other features of the machine are: tension-controlled loading and unloading by a mechanical arrangement; a hydraulically damped oscillating-expander arrangement; and a new main-drive gear box, using bevel gears mounted on antifriction bearings and running in oil for highest efficiency. The heavy box-section side frames with cast-iron girts contribute to quiet and vibrationless operation.

The jig is available with or without enclosure.

Circle T-3 on Reader-Service Card

Wound Bobbins Deposited Automatically on Pinboards



QUILL HANDLING is eliminated by this pinboard attachment that also keeps the yarns from getting mixed.

Newest refinement of the Foster-Muschamp Autofill winder is a device that automatically loads filling bobbins directly onto pinboards, ready for storage or for transfer to the weave room. The boards are available from Foster Machine Co., Westfield, Mass.

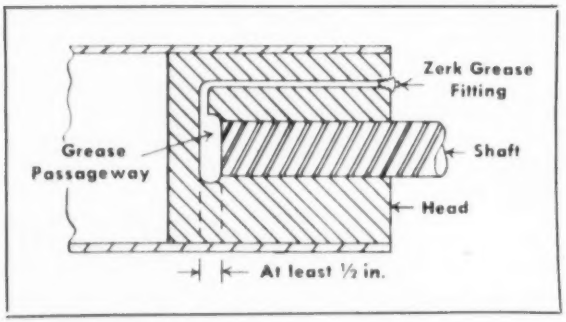
The attachment goes into action after bobbins have been automatically wound. Bobbins are deposited individually on pinboards, which will handle 48 quills. As each board is filled, it travels to the rear of the machine, where it can be collected or placed on a conveyor belt for automatic removal.

Advantages are that the filled bobbins are protected from bruising and dirt, color sorting is far more efficient, transportation costs are reduced, and safer storage is assured. Filling yarns are not cut or bruised by the usual causes since quills don't rub against each other.

The pinboard provides a ready method for the battery operator to segregate counts and color, inasmuch as each group of four spindles can take care of a different count and color. Sorted colors are supplied on individual boards, ready for the batteryhands, with no hand sorting required.

Circle T-4 on Reader-Service Card

Pressure-Fitted Shaft Removable in a Few Minutes



TO REMOVE THE SHAFT, grease is forced into the grease passageway under 10,000-psi. pressure to cause the shaft to emerge from the head.

Renu-Shaft rolls are a new brass-roll development of Rodney Hunt Machine Co., Orange, Mass., that makes it no longer necessary to discard a good brass roll because of the difficulty of replacing worn or broken shafts. Renewable shafts are now available for such rolls—shafts that pressure-fit into the roll head yet can be forced out by pressurizing from behind with grease in a few minutes.

At the base of the shaft is a well, connected to the face of the roll head by a right-angle channel sealed with a Zerk grease fitting. With the fitting open and the shaft hole filled with grease, the shaft is driven in to within ½ in. of full depth. The Zerk fitting is then closed.

To replace the shaft, a hand grease gun or other equipment of 10,000-psi. capacity is applied to the fitting. Pressure of several tons on the back end of the shaft is created, causing a steady pushing out of the shaft from the body of the roll.

Circle T-5 on Reader-Service Card

SONOCO'S DYTEX® TUBE

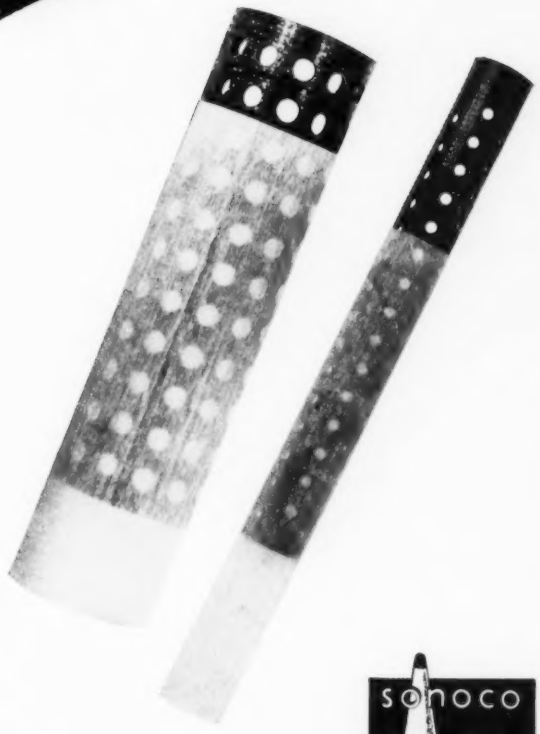
with PLASTAVON SLEEVE

. . . helps you–

DYE

√Cleaner

√Better



— and it's no accident! Here is a typical Sonoco product development—pre-tested, improved and tested again—and now industry-proven to be a superior filter for package dyeing. The DYTEX Tube, with exclusive Plastavon Sleeve, was designed to give you clean, even dye penetration and better control of "flow". Also reduces slippage in primary winding. Standard sizes 5/8" I.D. x 6¾" long and 1⅝" I.D. in varying lengths. Special sizes available. The 5/8" x 6¾" tube can be furnished in certain colors. Let DYTEX help you dye better!

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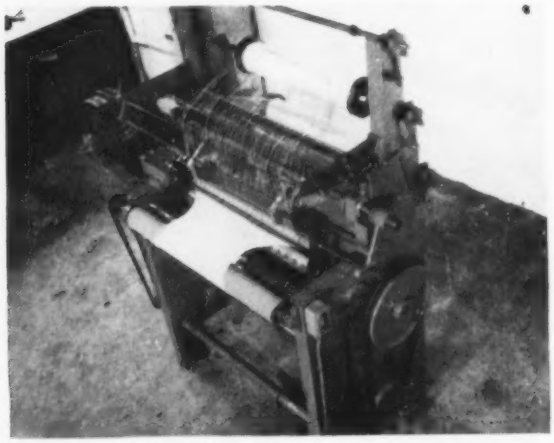
DEPENDABLE SOURCE OF SUPPLY

Sample Tricot Machine Has Three Guide Bars, Pattern Chain



UNLIMITED TRICOT SAMPLES can be made on this new sample machine equipped with three guide bars and a pattern chain.

A three-bar tricot sample machine is now available from Gibbs Machine Co., 1023 W. Lee St., Greensboro, N. C. The machine is built with a pattern-chain mechanism, although wheels can be supplied if needed.

The needle bar is 24 ins. wide and can be made in any gauge. Butted needles are used.

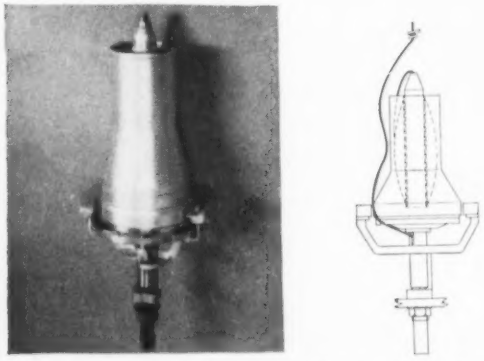
A ½-hp. motor is built into the rigidly constructed frame, which stands upon the floor. The machine is driven at high speeds from a reduction unit built into the motor. A V-belt drive connects the reduction unit to the camshaft. A brake-type let-off, which has sturdy bands, controls warp tension.

Three pattern wheels or chains of any length may be used. The action of the wheels or chains to the guide bars is transmitted through slides. The pattern-wheel ratio is made variable to any degree by changing one spur gear.

The positive take-up is controlled by a sprocket-and-chain mechanism from a reduction unit driven from the main shaft. Take-up tensions are altered by changing sprockets.

Circle T-6 on Reader-Service Card

Fine-Synthetic-Yarn Twisting Spindle Causes Little Tension



OUTER MEMBER of the double-twist spindle assembly in this case is designed for running 3⅛-in.-dia. 10-in. bobbins. Narrowest diameter of cover is here half way up, but it is made higher or lower (right) for yarns of different deniers and those requiring different amounts of twist.

By means of controlled double ballooning in the twisting of fine-count synthetic yarns, yarn tensions as low as 0.1 gms. per den. at spindle-disk revolving speeds of 10,000 rpm. are possible through the use of a double-twist spindle with yarn guiding cover developed by Landolt & Co., Aurorastrasse 84, Zurich, Switzerland.

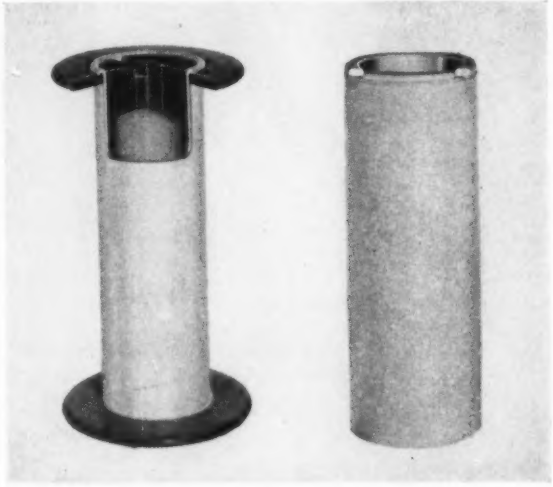
As a result of the low-tension twisting of fine yarns at high speeds, high twists, excellent production, undamaged yarn, and low power consumption are possible for frames or series of frames on this type of work. Production results are the same as would be attained if an ordinary twister spindle were run at 18,000 to 24,000 rpm.

The principle on which the almost tensionless double-twist spindle works is that yarn tension above the pigtail is determined by the uppermost part of a double balloon. Therefore the upper part of the double balloon formed is carefully controlled by the shape of the cover or cap that fits over the spindle and bobbin itself.

The bobbin itself does not revolve, only the disk below the bobbin, on which the yarn reserve is formed.

Circle T-7 on Reader-Service Card

Plastic-Headed Bobbin Has Aluminum Barrel



LIGHT WEIGHT, ability to withstand pressure, and non-oxidizing qualities are three advantages of the new bobbin as well as of a new headless-package tube.

A new bobbin and a headless-package tube for the processing of synthetic yarns have been developed by Spaulding Fibre Co., Inc., 310 Wheeler St., Tonawanda, N. Y. They offer full resistance to the crushing strength of synthetic yarns in the packaging process.

The plastic used is a laminated phenolic. No screws are used in the construction of either product.

The aluminum tube of the bobbin makes possible a large-diameter head connection to provide maximum resistance to yarn pressure, furnishes support to the barrel, and distributes the pressure load advantageously.

The plastic used in the headless tube is snag-free, distributes heat evenly in the steaming operation, does not oxidize, and is light in weight.

Circle T-8 on Reader-Service Card

Supreme's "Family Resemblance" simplifies profit knitting

LT/SAAF Regular and Long Loop Terry Stripes
LRP "Vent-Knit" mesh fabrics
SR Plain and Swiss Rib
SA/AF Variable Striped and Patterned Jersey
IC Fleece Coatings
ML Pile, Loop Terry, and Plush
MJ Wide and Body Size Jersey
ROf Jacquard-Type Floatless Patterns

The knitter-mechanic who knows one Supreme model finds it easy to get acquainted with the rest of the "family"

A basic similarity of construction and operation makes it simpler for him to get maximum production from every Supreme. It means quicker set-up, easier maintenance, less down-time. Net result ... lower production costs and higher profit.

Supreme's uniformity of design makes possible the interchangeability of many parts. This is some of the secret behind Supreme's convertibility feature which enables several models to switch from one kind of fabric production to another.

Another aspect of Supreme's "family resemblance" is the technical assistance that goes along with every Supreme to help make them a family of "profit-knitters" for you.

Ask for complete free information on any of the Supremes shown here.

Some Of The Mill Proven Features You'll Find In Every Supreme—

Stationary Yarn Stand • Smooth, Acting Revolving Cylinder and Dial • Maximum Precision Feeds • Patented Multi-Disc Clutch • Revolving, Floating Take-Up • Rugged Tripod Construction • Rugged, Smooth-running Silent Chain Drive

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The Malluck Co., 711 S. Tryon St., Charlotte, N. C.

SK-167

 For more information, write direct or use Reader Service post card.

Improved Loom Drive Requires Few Adjustments

The new Model D1 loom drive developed by Bahan Textile Machinery Co., Greenville, S. C., requires few adjustments by the loomfixer, the manufacturer claims.

The company says adjustments to keep the drive operating are not necessary because:

1. No grease or oil can get to the clutch friction disk to cause slippage.
2. Grease is forced to every part that requires lubrication.
3. Drive parts are designed to prevent wear.

Here is a description of the crankshaft parts of the drive, beginning at the loomside:

1. The combination handwheel and brake are placed on the crankshaft next to the crankshaft bearing in the loomside. The handwheel is bolted to the crankshaft gear when the gear is placed on.

2. The adjustable spacer collar equipped with two Allen-type setscrews serves a twofold purpose:

a. It spaces the crankshaft gear away from the crankshaft bearing in the loomside.

b. It is eccentrical for the purpose of aligning the crankshaft gear with the camshaft gear so that they can mesh properly.

3. The crankshaft gear is machined with three keyways so that it can be rotated to three positions to prevent wear to the gears from constant picking in one position.

4. The clutch friction disk is fitted to the crankshaft by a tapered split steel bushing. Three bolts pull the disk against the crankshaft gear and hold it firmly in position.

When the disk is to be removed to replace the crankshaft gear, the handwheel, or the disk itself, three ⅜-in. fine-thread capscrews are inserted in the disk and tightened with a wrench. The capscrews force the disk off the tapered bushing easily and without damage to any machine parts.

The disk is designed to keep external grease or oil spilled from the crankshaft or camshaft away from the cork surface.

5. A ground-steel sleeve with an internal keyway slides over the end of the crankshaft gear key. The sleeve (replaceable) provides a grease seal for the crankshaft keyway and a ground surface for the rotation of the motor gear.

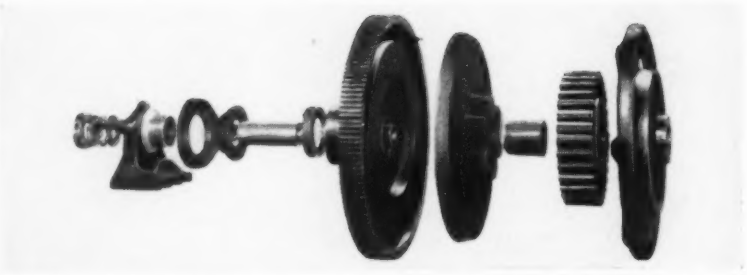
6. The motor gear revolves on a pressed-in bushing containing grease seals of rawhide held by snap rings. The grease seals keep all internal grease away from the friction disk.

7. The thrust bearing (ball bearing) is mounted in the motor gear and, consequently, is always in alignment.

8. The outside bearing is equipped with replaceable bronze bushings.

9. The outside thrust bearing is a ball bearing similar to the thrust bearing.

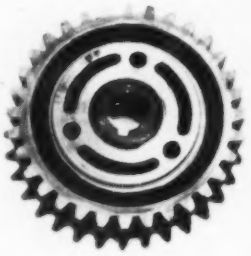
10. The outside thrust collar is a split collar made of steel. It is machined to lock in a groove (⅛ in. deep and ⅜ in. wide) cut near the end of the crankshaft. Two knurled-head Allen-type setscrews lock the collar positively to the crankshaft.



THE GREASE SEALS of the new loom drive prevent grease leakage and slippage at the disk.

The drive has only four greasing points:

1. One in the motor gear for the ground-steel sleeve
2. One in the motor gear for the thrust bearing
3. One in the outside bearing for the bronze bushing
4. One for the outside thrust bearing



THREE KEYWAYS in the crankshaft gear provide three picking positions, which will give reduced wear.

The company claims that the drive enables looms to maintain uniform speeds and that it is easy to apply to looms already in production.

Circle T-9 on Reader-Service Card

Hamper's False Bottom Makes Unloading Easy

BENDING OVER IS ELIMINATED by the use of springs at each corner of the false bottom. Work to be handled from the container is thus always at rim level.

A false bottom for canvas trucks, baskets, and hampers offered by W. T. Lane & Bros., Inc., Poughkeepsie, N. Y., automatically keeps work at rim level. Called Automatic Lift, the false bottom is suspended from the rim of the container by tension springs.

When work is loaded into the basket, the false bottom descends because of the load weight; as work is taken out, the bottom rises. The worker does not have to bend over and reach into the basket to empty it. This labor saver is especially suited for operations where baskets and trucks are frequently loaded and unloaded.

The platform of the removable lift is a canvas-colored, tempered-steel frame. To prevent snagging or pinching of stock the rust-resistant springs are encased in canvas sleeves.

The false bottom, which comes in a variety of sizes, can be used with any standard-size canvas truck or basket. It can also be adapted to other types of containers.

Circle T-10 on Reader-Service Card

PFIZER CHEMICALS
for the
TEXTILE INDUSTRY
How Can They Help You?

PFIZER GLUCONIC ACID, Sodium Gluconate, Ammonium Gluconate and Glucono Delta Lactone are extremely mild, non-toxic and non-corrosive. The sequestering ability of the gluconate radical plus their mildness make them highly valuable to the textile industry. They make possible clearer, sharper colors in dyeing by inactivating trace metals and are used as iron sequesterants in kier boiling and mercerization. Ammonium Gluconate and Glucono Delta Lactone prove ideal as acid forming catalysts for printing pastes.

PFIZER OXALIC ACID ranks high in the textile industry as a remover of rust spots and as a bleaching agent. This acid and its derivatives are also utilized to advantage in the preparation of alum and chrome mordants for dyeing.

PFIZER CITRIC ACID AND SODIUM CITRATE are becoming increasingly important in many textile processes because they form water-soluble complexes with metallic ions, such as iron and calcium, in neutral or slightly alkaline solutions. Being a mild organic acid, Citric Acid is also of interest as an acidifier in dyeing.

Write Department T for Bulletins #6, "Ammonium Gluconate and Gluconic Acid in Textile Printing," #27, "Glucono Delta Lactone in Acid Colloid Resins," #33, "Gluconic Acid and Derivatives," #34, "Oxalic Acid."

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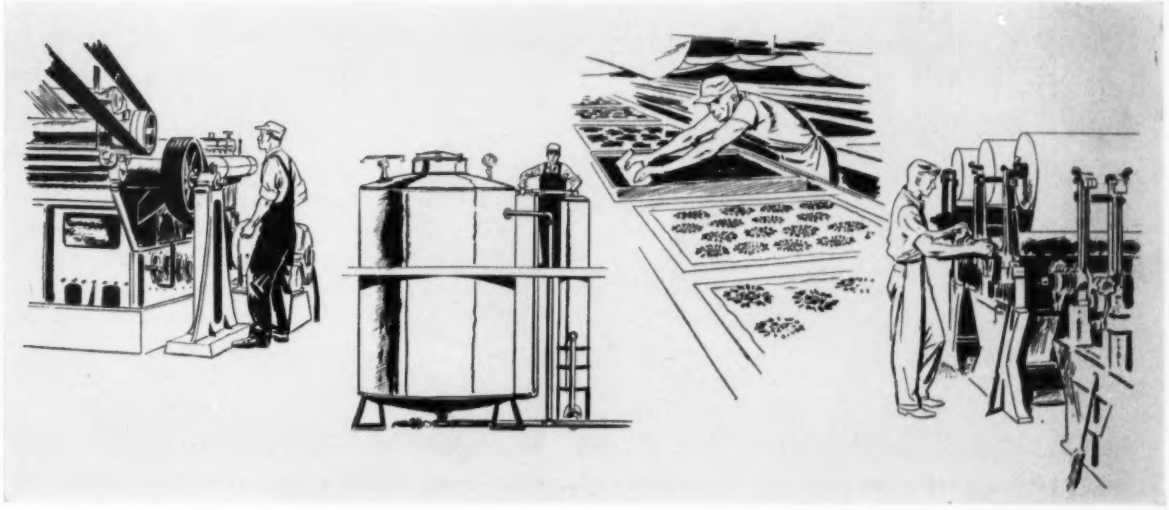

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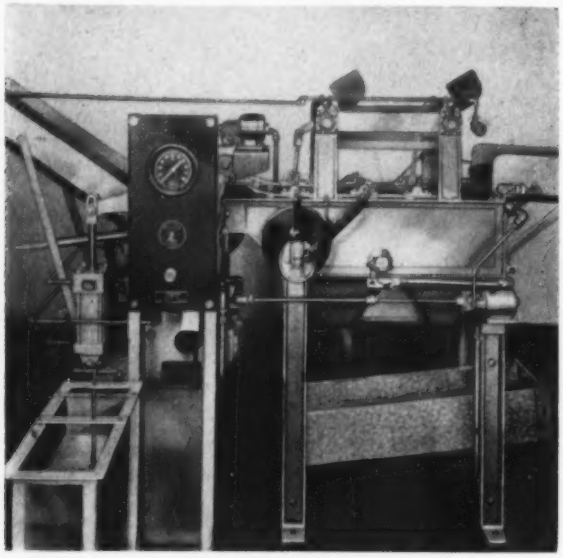
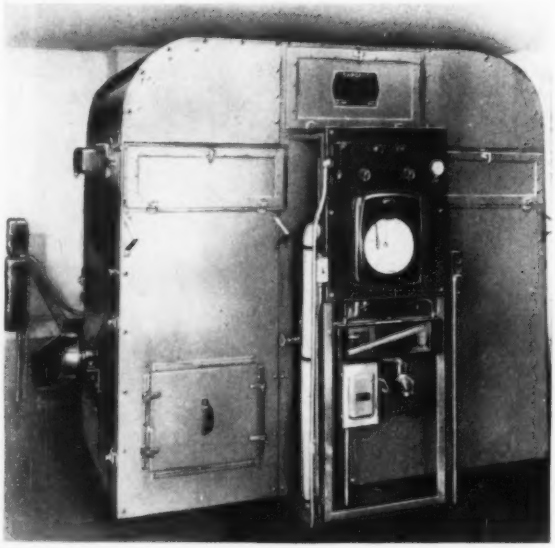
Junior-Size Washer and Dryer for Research Labs





SMALL UNITS allow for the development of controlled processing techniques in washing (left) and drying (right). Best techniques can then be transferred to regular large-production machines.

A pilot-model washer was recently developed by C. G. Sargent's Sons Corp., Graniteville, Mass., in cooperation with Lowell Textile Institute Research Foundation for the purpose of tracking down and measuring textile-fiber-processing sources of stream pollution. The junior-size washer is now available to pilot plants and laboratories.

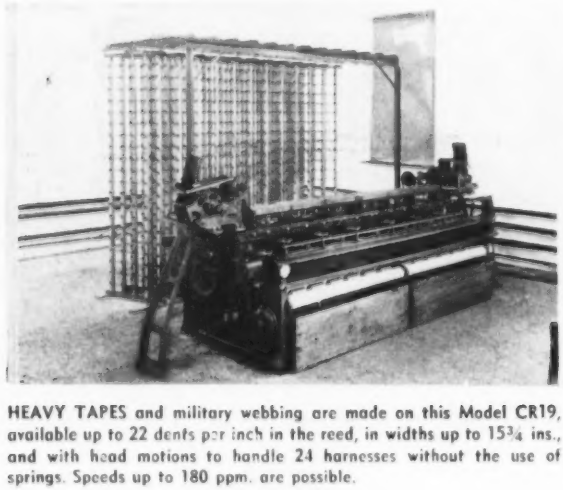
A companion unit, a 7 ft. 1 in. x 7 ft. 6 in. x 8 ft. 10½ in. junior dryer, is also now on the market as a companion unit to the washer. Both Lab Twins have complete control and recording instrumentation that allow for the reproducing of processing runs.

The washer has a 36-in.-long, 10-in.-wide stainless-steel bowl. There are two 60-in. hoppers. Liquor capacity is 16 gals.

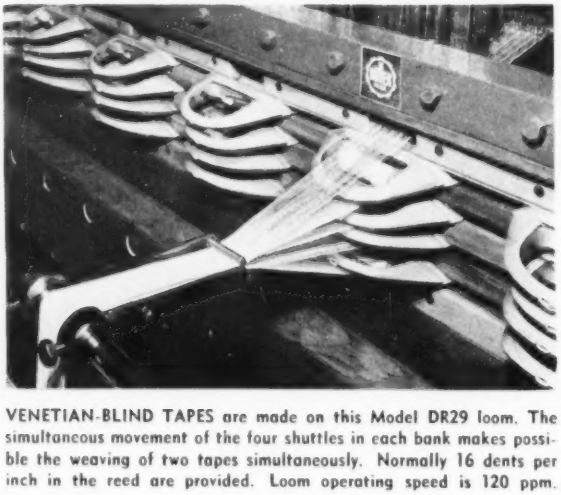
The dryer air flow can be made updraft, downdraft, or cross convection. Pole, tray, or apron drying can be done. Air speeds from 50 to 1,000 ft. per min. are possible by means of a variable fan speed.

Circle T-11 on Reader-Service Card

Narrow-Fabric Looms Run 180 and 120 Ppm.



HEAVY TAPES and military webbing are made on this Model CR19, available up to 22 dents per inch in the reed, in widths up to 15¾ ins., and with head motions to handle 24 harnesses without the use of springs. Speeds up to 180 ppm. are possible.

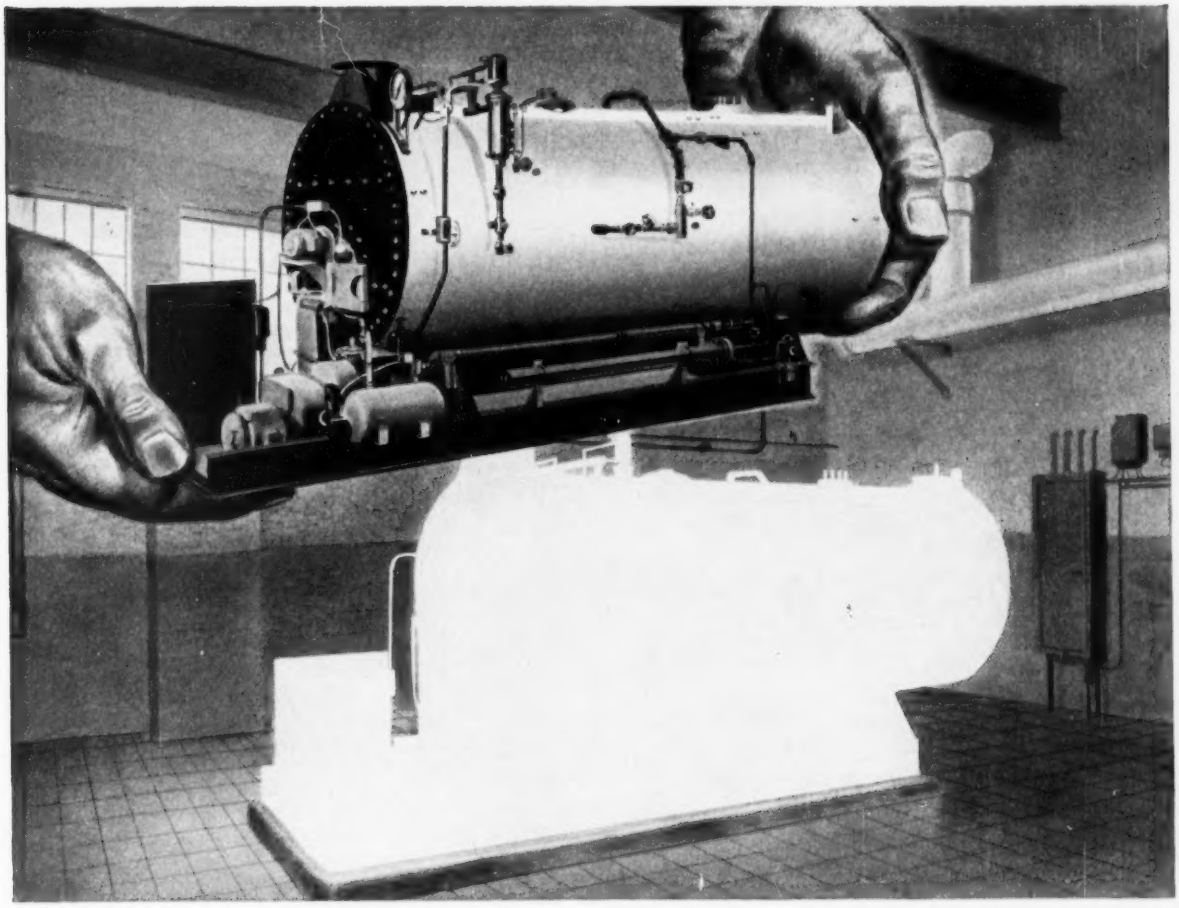


VENETIAN-BLIND TAPES are made on this Model DR29 loom. The simultaneous movement of the four shuttles in each bank makes possible the weaving of two tapes simultaneously. Normally 16 dents per inch in the reed are provided. Loom operating speed is 120 ppm.

Two Swiss narrow fabric looms, one for weaving webbing at 180 ppm. and the other for weaving Venetian-blind tape at 120 ppm., are available in the United States through Ernest L. Frankl Associates, 22 E. 40th St., New York.

Circle T-12 on Reader-Service Card

Here's why you get more...when you buy a Cleaver-Brooks Self-Contained Boiler



...only Cleaver-Brooks can offer you the experience gained from more than 20 years of pioneering . . . and more than 12,000 individual "packaged" boiler installations

CLEAVER-BROOKS pioneering has been largely responsible for simplifying boiler buying . . . lowering costs of installation . . . delivering 80% guaranteed steam efficiency from every fuel dollar.

Boilers can be shipped as completely assembled and tested self-contained units, with auxiliaries as required. Installation involves minimum of time, construction and space. Usually connections only to steam, fuel, water lines and electrical service are needed. No special foundations are required. A short vent takes care of exhaust gases. Frequently, boilers are ready for use in a matter of *hours*, depending on availability of service lines.

Cleaver-Brooks, originators of the self-contained boiler, offers wider experience that counts in another important way. Qualified engineers help you plan steam plants tailored *exactly* for your needs. Carefully analyzed are loads, space and equipment arrangement. This not only helps you solve present steam needs, but adds flexibility for future expansion as well.

This application engineering, plus basically sound design and construction is your assurance of a full return from your boiler investment. When you specify a self-contained boiler — make sure it's a Cleaver-Brooks.

Cleaver-Brooks steam or hot water boilers for heating and processing are available for oil, gas or combination oil/gas firing. Sizes: 15 to 500 hp, 15 to 250 psi. Write for Catalog AD-100.

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For more information, write direct or use Reader Service post card.

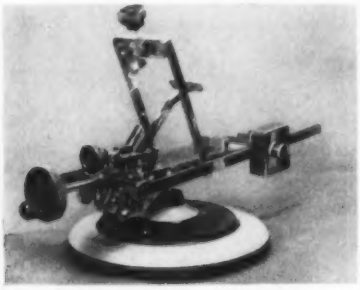
Fabric Spreader and Guider Has Dyehouse Use

ELECTRICALLY CONTROLLED stainless-steel spreader and guider manufactured by Birch Bros., Inc., 32 Kent St., Somerville 43, Mass., can be used in the dyehouse as a conical opener in conjunction with dye kettles and in the dyeing of pile fabrics, tufted cotton carpeting, and other fabrics that are dyed in the open width.

The unit can also be used to lay fabrics flat ahead of squeeze rolls.

Circle T-13 on Reader-Service Card

British Tester Quickly Determines Courses per Inch



DRY TESTING AND STITCH STRAIGHTENING compensate for stretching during knitting caused by humidity conditions, and other irregularity of stitches.

The Cobert course counter, which eliminates yarn-size, temperature, and humidity variables, has been developed by Albico Precision Mfg. Co. Ltd., Barby, Warwickshire, England, for use on knitted fabrics of various types.

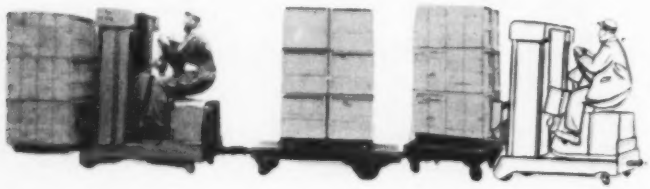
The principle embodied in the course counter consists of stretching the fabric to a point where stitches are closed evenly, or elongated to a standard degree, regardless of the condition of stitches and tension at the time of knitting.

With the fabric thus stretched and held taut under uniform tension between rubber clamps, the indicator is placed over it and the number of courses per inch is determined quickly. Readings tell with extreme exactitude whether any machine section is properly adjusted or is knitting too tight or too loose.

The goods are tested dry, and the stitches are held by a scientifically regulated amount of stretch. This method compensates for any irregularity in the shape of the stitch at the time of knitting.

Circle T-14 on Reader-Service Card

Automatic Couplers Improve Trailer-Train Handling



SEVERAL LOADED PALLETS can be hauled at one time by one fork truck if the new automatic couplers are used between trailers. Such a system frees a second truck for supplemental unloading at the final destination.

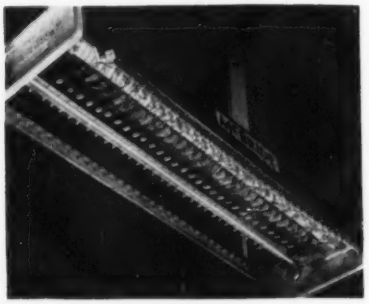
An integrated fork truck, tractor, and trailer system that uses automatic couplers to build up and pull multiunit trailer trains has been developed by Market Forge Co., Garvey St., Everett 49, Mass.

The company's present fork truck can be used as a tractor for loading the train or for pulling it, by means of the new medium-duty coupler. The company's miniature tractor equipped with the same coupler can supplement the fork truck.

Distances of 100 ft. or more are less costly to handle with the coupled trailer-train system than by individual haulings.

Circle T-15 on Reader-Service Card

Mercury-Sealed Stop Motion Works on All Yarns



LOOKING UP FROM UNDERNEATH, you see the rider weights that make possible the running through of any weight of yarn, the sealed mercury tubes that act as instantaneous switches, and the wiring arrangement.

Heavy cotton and wool yarns, as well as synthetic yarns up to 15-den. nylon, can be run successfully through a new supersensitive sealed mercury-switch stop motion for creels and other equipment that has been developed by Edward J. McBride Co., Inc., Cottman Ave. and Wissinoming St., Philadelphia 35, Pa. Instant stopping is obtained from the mercury action as soon as a drop wire starts to fall. By adjusting individual rider weights, drop-wire sensitivity is adjusted for the weight of yarn going through.

The electrical contact of the mercury switch eliminates sparking hazards and in addition is not subject to humidity conditions, corrosion, dust, or lint. Drop wires are of stainless steel.

Because of the counterbalancing construction of the rider weights, heavy tension loads on yarn going through, to hold the stop motion up, are not necessary.

A broad base is provided in the drop wire, running across three clips instead of one, that prevents side sway and the possibility of yarn interlocking and tangling.

A locking bar is provided for easier drawing in of ends. Activated by a handle on the side of the frame, the bar holds up the drop wires as long as needed and eliminates reaching down and grasping individual drop wires as the ends are pulled through.

Wiring of the stop motion is easy, with no tools or soldering required. Switches are equipped with clips that lock onto the bus bar, while the mercury tube slides into a little bracket under the base of the drop wire.

Two-way signal lights at each bank indicate where any end break has occurred.

Circle T-16 on Reader-Service Card

LOOK HOW LOTOL

Performs carpet magic!

Cotton Rug by THE Magee Carpet Company, in 15 beautiful colors.

Here's an achievement cotton carpet manufacturers everywhere will be glad to hear about. It means finer quality carpets *at no greater cost!*

"LOTOL"® is the magic compound — an amazing new latex from the laboratories of Naugatuck Chemical. Especially developed for cotton rug backing, it's now being used by Magee*. And look at the advantages it brings.

Locks pile for life! New LOTOL anchors the face yarn to the carpet backing *flexibly, permanently.*

Improves carpet properties! This remarkable new compound gives carpets finer "hand" or body, more resilience, greater weight, better feel, and good tacking strength. What's more, it prevents raveling, wrinkling, and slipping.

Impervious to the strongest dyes! Even 8 hours in boiling dye won't harm this backing. There's no discoloration or breakdown!

And the luxurious, odor-free carpets can be cleaned *time and time again* without danger of shrinking!

Wonder-working LOTOL compound, now available to the industry — is just one more reason why Naugatuck Chemical is first in latices — a reliable source of the finest basic materials for the finest finished products.

For more information on Lotol and the profitable possibilities it offers you for coating, bonding, or finishing products of all kinds, send the coupon below today.

**THE Magee Carpet Company, 295 Fifth Avenue, New York 16, N. Y.*

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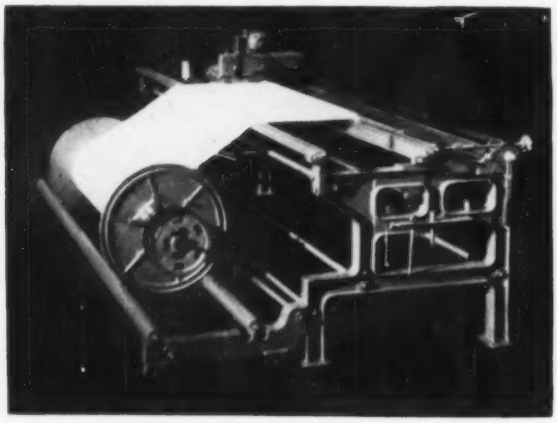
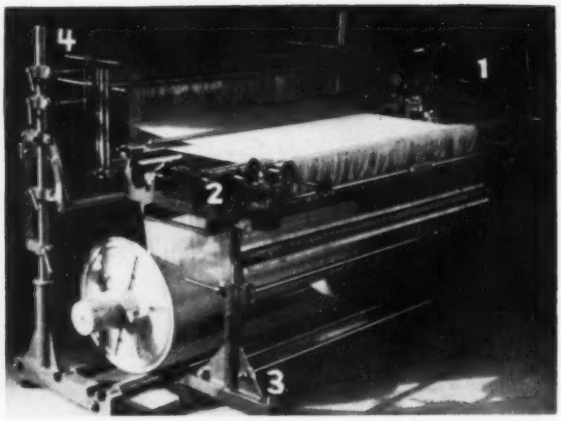
Leasing, Warp-Tying Machines Available From Germany



LEASING MACHINE will put an end-to-end lease in any warp made of any yarn or yarns without a change of leasing needle. Up to 12,000 ends per hour can be leased automatically, depending on the type of yarn. The working width is 98½ ins. Cost f.o.b. German port, including export packing: $1,895.

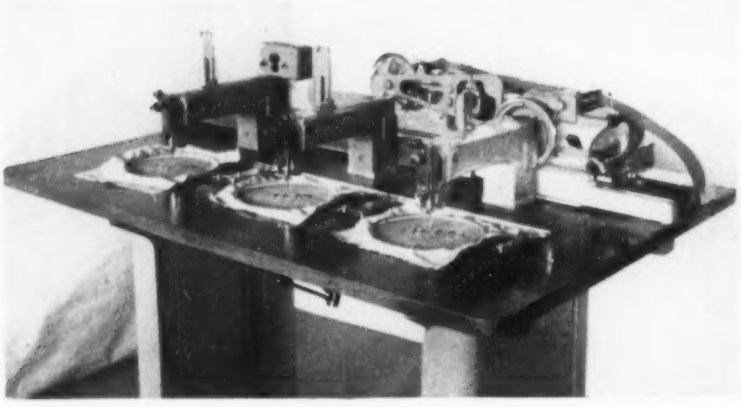


WARP-TYING MACHINE in all models knots 200 to 300 knots per minute. Stationary and portable models are made. This stationary model includes (1) the knotting head, (2) the portable knotting frame, (3) the carriage, and (4) the portable knotting stand. The f.o.b. price of $3,790 includes a two-year supply of spare parts.

Two German textile machines of interest are now available in the United States and Canada from Stellite American Corp., 60 E. 42nd St., New York 17, N. Y. They are the Model 1951 leasing machine and four models of warp-tying machines, manufactured by Maschinenfabrik Oskar Fischer of Rottenburg am Neckar, Wuerttemberg.

Circle T-17 on Reader-Service Card

Unit Embroiders Direct Without Sewing of Patterns



FLORAL DESIGNS, insignias, and monograms can be applied directly to all types of fabrics with this German-made machine now available in the U. S.

A three-headed jacquard-controlled embroidering machine that operates equally well with all types of yarns and fabrics and that permits direct embroidering with no subsequent sewing on of patterns has been made available in the U. S. through Robert Reiner, Inc., Gregory Ave., Weehawken, N. J. The unit is manufactured by Carl Zangs A. G. in Krefeld, Germany.

Size of the embroidery field is approximately 8x10 ins. Output is 250 stitches per head per minute (750 stitches total). One operator can handle from six to nine heads.

Among the embroidery types possible on the machine are broad, back, chain, and cross stitches, as well as Madras, Toledo (Ajours), and several others.

Circle T-18 on Reader-Service Card

Sewing-Table Steel Trough Mounts on Table Legs

EASY HANGING ON AND TAKING OFF of the individual steel trough developed by American Safety Table Co., Inc., 224 Fifth Ave., New York, N. Y., is made possible by mounting brackets that utilize holes provided in the table legs. Thus the necessity for drilling new holes is eliminated and speed in handling is assured. The trough is removed without disturbing the table top, and the table top can be removed or changed without disturbing the trough.

Known as Style IT48, the trough is made of pressed steel and comes with snag-proof hardware and rubber pads at the four corners. Supporting braces assure stability. Dimensions of the trough are 12x47½x15 ins.

Circle T-19 on Reader-Service Card

Gaylord Boxes are Easy to Set Up... Hard to Break Down

Solid, straight-standing Gaylord Boxes are designed for fast handling and product protection . . . from packing until final delivery. Your best assurance of tough, resilient, corrugated boxes is Gaylord's careful quality control . . . from the planting of pulp forests, through every step of box manufacture.

For sturdy boxes with easy handling and attractive appearance "built in," contact your nearby Gaylord Sales Office. You'll find it listed under "Boxes (Gaylord)" in the classified section of your phone book.

Gaylord Boxes

Their seen and unseen quality gives you an extra margin of safety.

GAYLORD CONTAINER CORPORATION

General Offices: SAINT LOUIS • Sales Offices Coast-to-Coast

CORRUGATED AND SOLID FIBRE BOXES • FOLDING CARTONS • KRAFT BAGS AND SACKS • KRAFT PAPER AND SPECIALTIES

 For more information, write direct or use Reader Service post card.

British Fiber-Length Tester Also Records

A machine has been developed by the Wool Industries Research Association in Britain for the semiautomatic measurement and recording of the lengths of single fibers of wool, rayon, and other fibers. The machine is available in the U. S. from Stellite American Corp., 60 E. 42nd St., New York 17, N. Y.

The machine comprises two elements, the measuring unit proper and an auxiliary counter.

The method of operation is as follows:

A lead screw extends the whole length of the front of the machine. It rotates at a slow speed, being driven by a motor at the right-hand end of the machine.

Fibers are drawn singly from the samples to be analyzed by means of a special pair of forceps. The points of the forceps are engaged in the groove of the lead screw and press lightly at the same time against a fixed fence extending the length of the screw. The rotating screw slowly pushes the forceps to the right, and the single fiber is drawn along the length of the screw.

The fiber pulls through a lightly loaded jaw that incorporates a sensitive trip arrangement, which stops the rotation of the load screw when the end of the fiber comes through.

The forceps are then at a measurable distance along the screw, which is the length of the fiber.

Lifting the forceps out of the screw moves a counting wheel at the back, corresponding to that length, one number forward. Thus, a look at the counter following measurement of all the fibers in the sample gives the num-

(*Continued on page 220*)

NEW *Dyes* AND *Chemicals*

Cellulosic-Type Size Is Readily Soluble

A new rayon warp size of a cellulosic nature, called Tylose KZ, is cold-water soluble and stable in solution. The Henneux Co., 45 Columbus Ave., New York, N. Y., distributors of the product, claim the size is removable by a simple hot-water rinse. Mold, fermentation, and insects do not attack the product in storage or on the cloth.

Circle D-1 on Reader-Service Card

Five New Latyl Colors Added to Dacron Dye Range

The production of five new Latyl dyes, Brilliant Blue 2G, Blue GE, Orange R, Red B, and Violet B, was announced by E. I. du Pont de Nemours & Co., Inc., Wilmington 98, Del. These new dyes were specifically developed for application to Dacron polyester fiber but can also be used for pastel shades on acetate.

The Latyl colors have very good all-round fastness. Brilliant Blue 2G produces extremely bright, greenish-blue shades of especial interest for pastels. Blue GE has very good light- and wetfastness and is of interest for use in combinations. It is recommended as the blue component in mixtures with Latyl Violet B and Acetamine Fast Yellow 4RL for producing navy shades that are fast to light.

Orange R is characterized by its bright, reddish-orange shade. This new dye for Dacron is applied from aqueous carrier baths, from aqueous pressure baths without a carrier, or by the Thermosol process. Red B has very good wetfastness properties. It can be used advantageously in light shades of gray and tan because of its outstanding lightfastness.

Violet B has a bright, blue-violet shade on both filament and spun Dacron and does not tar in the dyebath. It is an excellent base for brown, navy, and black shades and is recommended for application to stock, tow, top, or fabric.

Circle D-2 on Reader-Service Card

New Polymer May Have Interesting Textile Uses

A new polymeric material made by General Aniline & Film Corp., 230 Park Ave., New York, N. Y., is the ammonium salt of the half amide of PVM/MA (methyl vinyl ethermaleic anhydride copolymer). The material is a neutral, water-soluble, hydrophilic colloid and is available as a white amorphous powder. Its viscous and adhesive properties suggest its use in sealing formulations and coatings of all types. The product can also be crosslinked with formaldehyde to form insoluble compounds.

Circle D-3 on Reader-Service Card

Saran Dyeing Process Gives Best Results Below Boil

Saran is a vinylidine chloride fiber manufactured by several producers. It has become an important member of the newer synthetic-fiber family and is used in many fabric combinations. It is receptive to certain types of dyes and possesses outstanding resistance to chemicals and solvents. Acetate dyes have shown good results in coloring this fiber; and the Latyl dyes, recently developed by E. I. du Pont de Nemours & Co., Inc., especially for use on Dacron polyester fiber, are quite effective in dyeing saran staple yarn.

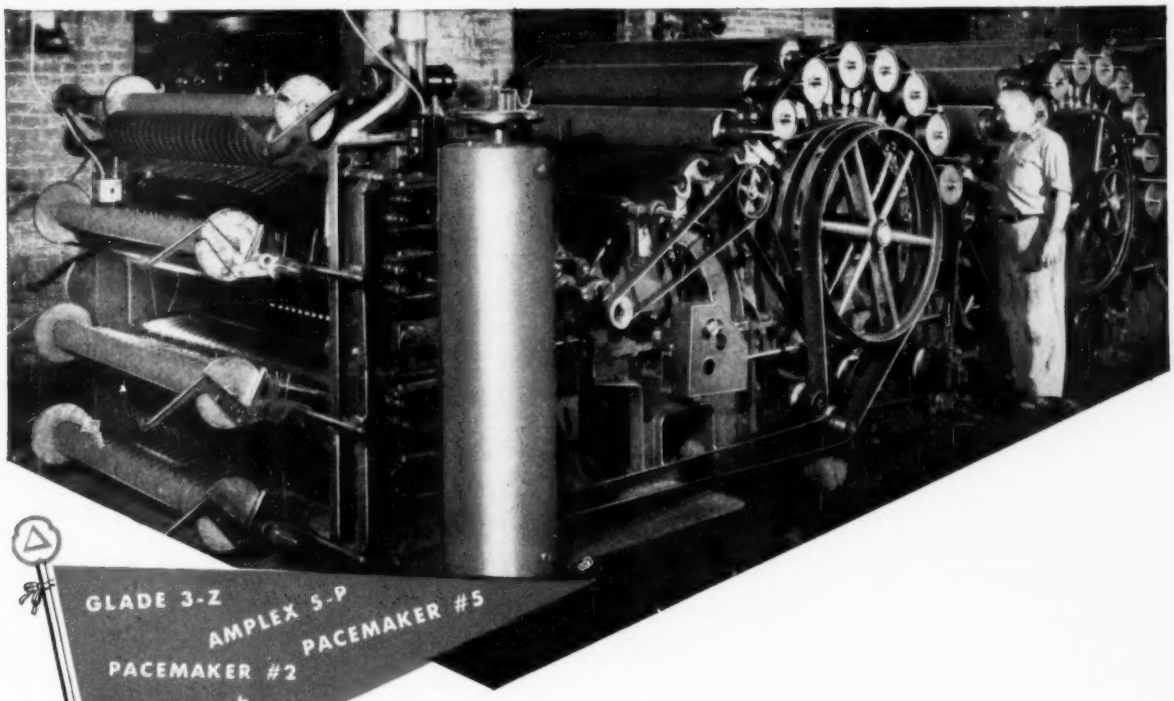
The dyeing of saran staple yarn has been investigated at the Du Pont laboratory, and the following preliminary data have been presented pending more complete information and recommendations:

Saran yarn was prescoured for 15 mins. at 160° F. with 0.25% of Duponol D. paste, and then dyeings with several dispersed dyes were made at concentrations of 0.5%, 2%, and 5% for 1 hr. at 160°, 180°, 200°, and 212° F. In most cases the build-up was good at the two higher dyeing temperatures, with the dyeings made at 200° F. somewhat better than those made at 212° F. The lightfastness was also generally superior on the dyeings made at 200° F. After dyeing, the yarn was scoured for 15 mins., at the dyeing temperature, with 0.5% Duponol D paste.

With these preliminary dyeings the optimum dyeing temperature was established at 200° F. A selected number of Acetamine, Celanthrene, and Latyl dyes were then dyed at 200° F., at the concentrations above mentioned, and crocking and Fade-Ometer fastness determined.

Ratings for a wash test are not included since the AATCC No. 3 test was tried and found too severe, since it caused an appreciable strength loss in most of the dyeings, although there was only a trace staining of adjacent fibers. It is suggested by Du Pont that dyeings on saran be given a milder wash test, especially since this fiber probably will not be used in end-use fabrics requiring fastness of this type.

COMPLETE JOB BY CITIES SERVICE LUBRICANTS . . . Glade 3-Z keeps leather on rolls soft and pliable. Amplex 5-P is used for oiling line shafting, Pacemaker #2 on spindle bearings, Optimus #6 in steam cylinders, Pacemaker #5 in steam engine crankcase.



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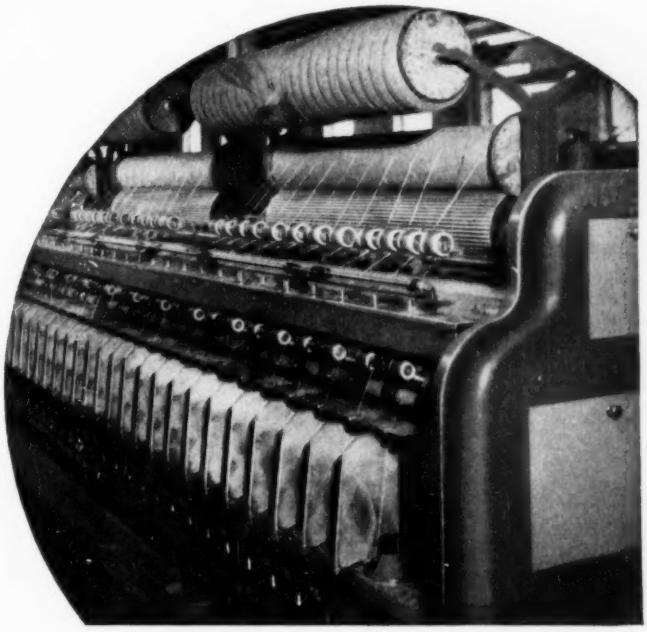
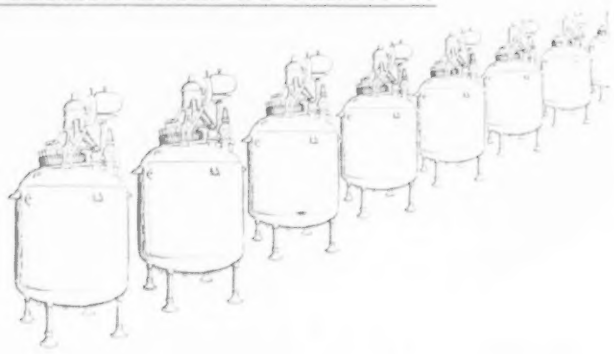


This research chemist needs 30 ounces...



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Round Table

HERE'S A BETTER METHOD FOR NYLON EXTRACTION

Dear Editor:

The method given on page 131 [TW, June, '53] for the determination of the percentage nylon in a blend is far from an ideal one. While it is true that nylon is soluble in 90% formic acid, the potential danger in using this chemical makes it highly undesirable.

A far more satisfactory chemical is the 20% hydrochloric acid method given in the *AATCC Yearbook and Technical Manual*. In addition to presenting less danger from the chemical, it is a far simpler procedure and less time consuming. Apart from oven drying, the actual treatment time with 20% HCl is less than an hour, whereas the formic acid method described requires approximately four hours. The 20% HCl method also works by dissolving nylon and leaving all the other common fibers as insoluble (2% correction for acetate, 1% for Vicara, 0.5% for viscose and for cotton).

And as a final point, it should be mentioned that the formula given for determining the percent of nylon present is completely wrong. As the extraction is with formic acid and as the material that is soluble in formic acid (nylon) is the only material being extracted, it follows that what is left after extraction must be everything but nylon. Accordingly, weight of material before extraction minus weight of material after extraction yields weight of nylon extracted. This divided by the weight of the material before extraction and multiplied by 100 gives the percent of nylon, and not the percent of wool or any other fiber that is insoluble in formic acid.

JACOB K. FREDERICK, JR.
Lowell Technological Institute
Lowell, Mass.

[The mistake referred to by Professor Frederick is properly corrected in his last paragraph. The mistake was not made by the author of the article but was an editorial error.—Editor.]

AN AUTHOR COMMENTS

Dear Editor:

I would like to make a few comments on my article in TEXTILE WORLD [TW, June, '52, p. 149] on ends-down standards used in our spinning room.

Since the article appeared, I have been told that the ends down on a frame must be considered as an event that occurs infrequently and is subject to the laws of Poisson distribution and not to the laws of Gauss as I first thought. However, I do not think it makes much difference for practical application.

My method seems to work all right. I suppose the standards could just as well be established without any calculations at all, they could be established by altering them until one gets a reasonable number of frames out of the standards, say 10% of the frames.

The main point is to establish the standards within reasonable limits and stick to them. If you get accustomed to finding a certain number of frames out of standard every day, you will worry if the number gets worse and be satisfied if the number is better. You can just as well get accustomed to finding 2, 5, or 10 frames out of standard, but you should not go too low because then there is no difference between good and very good. That is why we adopted standards with two standard deviations instead of three.

HARRY BRASSEUR
Managing Director
Contonnière Nouvelle Orléans
Ghent, Belgium

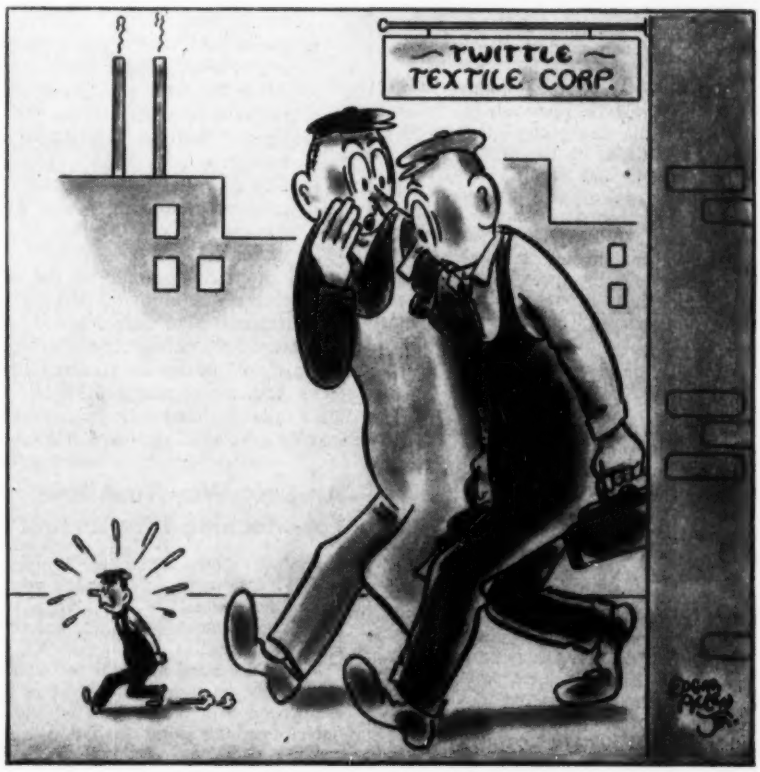
DOES NYLON WASTE FLASH-BURN?

Dear Editor:

In an article that appeared in the May, '53, TEXTILE WORLD, in the next-to-last paragraph on page 110, is a statement that causes me much concern.

Just what is the flash-fire problem in

TEXTILE TICKLES . . . . . *By Edgar Allen, Jr.*



"It's been a tough day for O'Malley. He got caught in the reducer!"

the picking of nylon stock? I was not aware that nylon would flash-burn.

A READER

[This question was put to the author of the article and the following reply was given.—EDITOR.]

". . . I give you my answer to the question as I got it from the mill:

Question: As nylon burns at about 470° F., do you think that high enough temperatures are generated in opening of nylon clips or threads in a rag-picker to cause flash fires? Are these a possible cause of blackening of the tips of the fibers?

Answer: "We never took the actual temperature generated in a rag-picker running nylon. We only noticed the fact that black spots have been caused by flash fires. We remedied the trouble by wetting the nylon clips or threads before we put them in the machine.

Even this answer is not based on scientific procedure, but it is based on practical experience, and that is all I can say to your question."

GUSTAV ZELLNIK

NEW LABOR SOURCES

Dear Editor:

Mills have their own ideas about the age, ability, education, and experience of the group they prefer for employees. But in a tight labor market it is often necessary to go beyond this "ideal group" in order to maintain production schedules. Thus in many cases the mill must today consider a wider range of workers than would ordinarily be preferred.

Next to "the ideal group," then, what other group makes up the largest section of the available labor supply? Study that second-best part of the population to learn its problems, possibilities, and adaptability to your needs. Then a mill will be prepared to understand these individuals enough to attract them to mill jobs, keep them happy there, and use their efforts efficiently.

Training becomes easier when you are dealing with one or two new sources of labor, rather than with a miscellaneous assortment of people outside the ideal standards for mill workers. You gain cooperation because you have first given them an understanding they are unlikely to receive on other jobs. And it follows that if you make yourself particularly sympathetic toward the problems of a certain type of substandard worker, then your own desire to help them will be the very incentive they require to bring out their best efforts.

Going beyond the ideal section of the labor market, then, invariably brings problems. Mills can hold these problems to a minimum by concentrating its employment in one or two major sources of labor, rather than abandoning the attempt to retain reasonable standards and goals.

GEORGE M. DODSON

Harrisburg, Pa.

Questions AND Answers

Direct-Dyed Cheeses Dyed Without Staining

Technical Editor:

How can we avoid staining of direct-dyed cheeses during drying? (9669)

The problem of drying direct-dyed cheeses involves the migration of color from the inner parts of the cheese to the more quickly drying outer surfaces (capillary action). The best way to avoid this trouble is:

1. Extend the dyeing cycle and add salt (NaCl) very slowly to get maximum penetration; in other words, avoid surface dyeing as much as possible.
2. After the dyebath is exhausted of color, drop the bath and give the yarn a cold-water rinse.
3. Soap with 0.5 to 1% synthetic detergent with about 0.5% Sequestrene or Nullapon at 140° F. for 10 mins.
4. Rinse cold. If the color continues to bleed, repeat the soaping.
5. After the last rinse, add 2% salt and circulate 5 mins.
6. Extract well in centrifugal extractor.
7. Dry slowly at first to retard migration; then increase the heat toward the end of the drying cycle.

The external appearance of the yarn after this procedure will perhaps be less attractive than before because of an accumulation of salt crystals. These crystals will cause no trouble, however. Addition of about 0.5% aluminum sulfate (alum) with the salt rinse may be helpful in the heavier shades.

An Easy Way To Allow For Machine Interference

Technical Editor:

T. F. O'Connor's recent article on machine interference [TW, Dec., '52, p. 100] aroused my interest—but left several problems unanswered.

The tables listed are good for interference caused by stop time t; but jobs like spinners, doffers, and twister tenders require something more. In both jobs the worker's attention is required before the stop. In twisting he must leave the stopped frame at times to put up ends on other frames. In both jobs certain elements of work are necessary on the frame just started before the worker can proceed to the next frame; the doffer must put up initial end breaks, take his full baskets to storage, get empty baskets, and return to the next frame. The twister tender must put up initial ends breaks and inspect to see if the correct number of ends is going to each bobbin.

Stop time t and running time T equal cycle time. Since the frames are running, these elements cannot be included in the stop time part of the cycle but must be considered in interference calculations.

Can you enlighten me? (9653)

There is no one method to determine machine interference accurately for all situations. All that a mill can do is to estimate interference on a statistical basis and make allowances accordingly in the set task; so the operator may be on the losing end now and again, but over a prolonged period the assigned job will be fair.

You are describing what is called in-cycle work; that is, work that has to be done on a machine while it is running. If t represents the time worked by the operator on the machine when it is stopped, and t^1 is the in-cycle work (T as usual being machine time) there are two conditions:

1. The in-cycle work can and will be abandoned immediately after a machine stoppage occurs. In this case it adds to the operator's load factor but does not affect the cycle time.

2. The in-cycle work is not abandoned and may even take priority over an ordinary stoppage. Here an adjusted cycle ratio is used. Instead of $p = \frac{t}{T}$, we use $p^1 = \frac{t + t^1}{T - t^1}$. The value of A^1 corresponding to p^1 is read from the tables as usual. In calculating H, the cycle time, use $T - t^1$ in place of T. Thus not

$$H = \frac{NT}{A} \text{ but } H = \frac{N(T - t^1)}{A}.$$

Load factor is p^1A^1.

When you have a group of machines carrying the same kind of work, work with cycle ratios within ±5%. The estimation is simple and the result is reliable for ordinary purposes.

Check Top Bristle and Eye To Stop Transfer Breakage

Technical Editor:

How can we prevent thread from breaking on the transfer? (9666)

Failure to use the proper type of eye and failure to install the shuttle bris-

tles in the right position will cause the filling to break on the transfer. Check the shuttles to see if the bristles are installed so that the filling does not have excessive tension on it when it unwinds from the bobbin. If the top bristle is too stiff, the filling will break as soon as the shuttle is picked from the magazine. The top bristle should be flexible; it should be cut short enough so that it will snap back in place after the bobbin is pushed down during transfer. This test can be made by pushing the bobbin down by hand, unwinding the filling, and making sure the bristle snaps back into place.

The position of the bristles is also important in relation to how the bobbin is wound—right or left. When the filling is unwinding, the yarn must slide under the bristles and not push up against the end of the bristles. There are three types of shuttle eyes, right hand, left hand, and a neutral. The neutral eye may be used with either right- or left-wound filling. On a left eye the slot is off-centered to the left side (when you are holding the shuttle with the eye in front and the bobbin clip toward the back). A right eye has the slot on the right side, and a neutral eye is in the center.

If all the filling is to be wound in the same direction, use an eye for that one kind of wind. Some mills use filling wound in different directions, and they use a neutral eye.

The thread holder should be positioned and adjusted so that the point where the gears mesh will line up with the eye of the shuttle in the drive box (lay at front center). It should be adjusted high enough so that the filling will not catch on the binder.

Similar Cotton Fibers Should Mercerize the Same

Technical Editor:

What is the relationship between cotton-fiber properties and mercerizing? We are interested in substituting American cotton for Egyptian cotton, and we want to find the cotton with the best mercerizing properties. (9665)

Based on the way fibers react when they are treated with a caustic solution, medium or thick-walled fibers would seem to be more suitable for mercerizing than extremely thin-walled or immature fibers. It would seem, therefore, that if American cotton is substituted for Egyptian cotton, the American cotton that is as similar as possible in length and fineness should be selected. Pima 32, for example, is very similar in fiber properties to Egyptian Karnak, although there can be some variation in fiber fineness.

Ten Questions and Answers On Plastic-Coated Fabrics

Q. Is a top-spreading method with a doctor blade applicable to all fabrics, or can a pick-up-roll method be used to better advantage with some fabrics? (9670)

A. While both methods are used satisfactorily, many mills appear to prefer some variation of the pick-up roll. The design and engineering of specific equipment usually determine its limitations.

Q. What method of drying is best used following the latex application—pin dryers, clip tenters, loop dryers, or can dryers?

A. Pin dryers and clip tenters keep shrinkage to a minimum. However, it is desirable to avoid excessive pulling after coating. Loop dryers are satisfactory; can drying is least suitable.

Q. Which of the following types of latex emulsion are best suited for upholstery backing: Buna-s (GR-s latex), Buna-N (Hycar, etc.), or chloroprene (neoprene)?

A. Buna-s latex is most commonly used since it is lower in cost. Suitable compounds can be made from the other materials.

Q. What factors influence the bonding of the rubber to the fibers so that the coating will withstand scouring and dyeing without too much softening of the handle?

A. Proper compounding is the most important factor. Avoidance of excessive filler loading, proper dispersion, correct application, and good vulcanization are all necessary for good adhesion.

Q. Are there any chemical or mechanical factors in scouring or dyeing after rubberizing that should be avoided to eliminate a breakdown of the rubber film?

A. Too-strong alkalis and detergents may mechanically weaken the bond; so scouring should be kept at a minimum. Traces of metals such as copper or magnesium may be detrimental to the rubber. Excessive stretching and pulling should be avoided in these operations.

Q. Should rubberizing be done before or after dyeing?

A. This answer depends to a considerable extent on the exact product required and the equipment available. From available information it appears that dyeing after rubberizing is the more common practice.

Q. In the top-spreading method, what kind of end plates can be adapted to prevent drip over the selvage and to compensate for width variations and side play in the cloth travel?

A. It is best to use mechanical guiders and avoid side play. End plates that fasten by hooking over the top of the knife can be readily moved by the operator to compensate for variations in width.

Q. What resins can be used in conjunction with latex to make the latex film softer or firmer?

A. The hardness is usually controlled by the degree of loading. Plasticizers may be added in emulsion form, but they are generally not required.

Q. In the top-spreading method, can the viscosity of latex be so high that penetration would be reduced to such an extent that proper bonding would not take place?

A. On most fabrics good adhesion can be obtained with any viscosity that will coat satisfactorily.

Q. What viscosity of latex should be applicable to most fabrics?

A. No specific viscosity is recommended because the best viscosity is almost entirely dependent on the specific equipment involved.

No Static Eliminator For Flat Knitting Machine

Technical Editor:

We have trouble in controlling our nylon-staple yarn when we knit sweaters on flat machines because of static electricity. Are there any static eliminators that would be suitable for knitting machines? (9667)

Static eliminators are made for warpers, garnetts, and other textile machinery, but not for knitting machines. However, devices similar to the static eliminators on warpers could be stretched across a flat knitting mamine to reduce static.

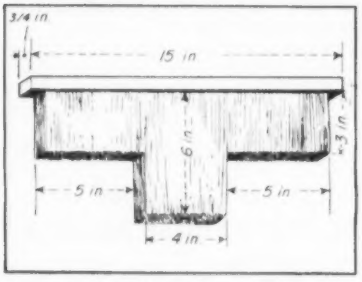
Methods that knitters have found to decrease the problem of static electricity in synthetic yarns are:

1. Increase humidity in the knitting room.
2. Use antistatic treatments on the yarn during winding immediately before knitting.
3. Use rough-surfaced thread guides.

(*Continued on page 228*)

Kinks AND SHORT-CUTS

Brush on Overhead Cleaner Keeps the Track Clean



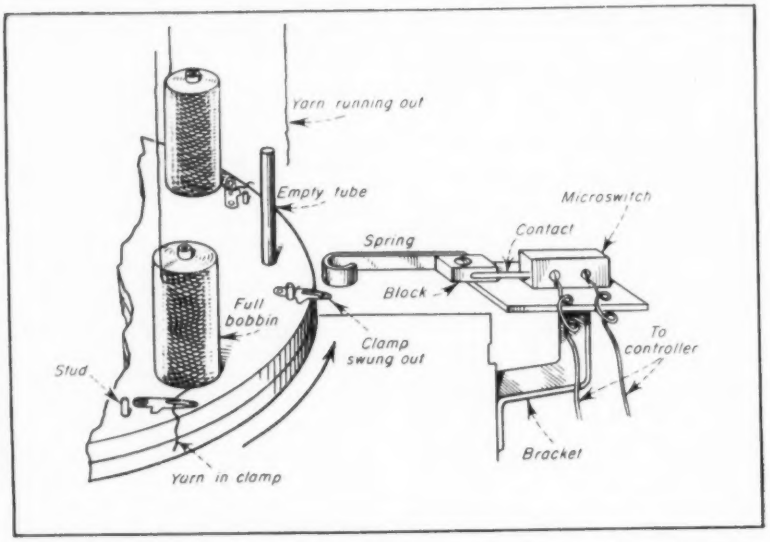
BRUSH FOR CLEANING TRACK fits under the overhead cleaner and wipes the track as the cleaner moves along. An air blowing twice a week keeps the brush itself clean enough to do the job.

It used to cost us about $12 a week just to clean the track for our overhead cleaners. I figured that a brush attached to the cleaner could do the job free; so I designed one and had a brush company make it.

My brush is 15 ins. long and 3 ins. deep, except for a 4-in. section in the middle that is 6 ins. deep. The bristles are ¾ in. thick. A piece of flat iron attached to the brush is also attached to the cleaner to hold the brush in place.

The brushes are removed twice each week and are blown off with air. The cleaning takes only a few minutes. *J. B. Boyter, Dallas, N. C.*

Wrap-Yarn Stop Motion Helps To Reduce Seconds



HOSIERY SECONDS are reduced by this electric stop motion that stops the machine when the wrap bobbin becomes empty.

Many of the seconds in our half-hose wrap numbers were caused by wrap yarns running out. I was able to reduce our seconds by building a device to stop the machine when a bobbin becomes empty.

I had some special clamps made and screwed them into the wrap-yarn ring ½ in. away from the edge of the bobbin and ¼ in. from the edge of the ring. A collar screw was used so that the clamp was free to rotate.

The clamp was made from ⅛-in. stock and had a ⅛-in. clearance hole to take the collar screw and a 4-40 tapped hole in the other end. A spring clamp was held by a 4-40 screw.

The tail end of the wrap yarn is gripped in the clamp; and when the bobbin runs empty, the yarn tail pulls from the clamp. Centrifugal force causes the clamp to swing out as the bobbin ring rotates. The clamp strikes a spring held close to the edge of the ring. A stud fixed to the left of the clamp prevents the clamp from swinging too far back; so the clamp moves the spring to one side.

The spring is attached to a ¾x½x⅛-in. metal block screwed to a metal plate. The metal plate is fixed to the machine frame. A Micro switch is fitted to the plate in such a position that the metal block will strike the contact when the block is moved. The switch is connected to the controller to throw the belt shipper off and stop the machine when the yarn runs out. *Howard McCurry, Lincolnton, N. C.*

Harness-Strap Knock-Off Used To Stop Loom

Stopping a loom on the head motion side with the shuttle in the box can be done with a heddle wire if the loom is equipped with an electric knock-off to stop the loom when a harness strap breaks. Mount the heddle by loosening a nut in the loom frame, placing the heddle under the nut, and tightening the nut again.

To stop the loom, push the heddle against the knock-off bar to complete an electrical circuit. The knock-off stops the loom. *Peter Sterk, Janesville, Wis.*

Make Your Own Balance To Check Yarn Number

You can have an accurate and inexpensive balance to check yarn number if you build this one yourself.

Principle of the balance is this: it takes a certain length of yarn, depending on yarn number, to counterbalance a fixed weight. If the fixed weight is known and if we chop up the yarn into fixed lengths, the only unknown is the number of lengths of yarn. The calculation from that point is easy.

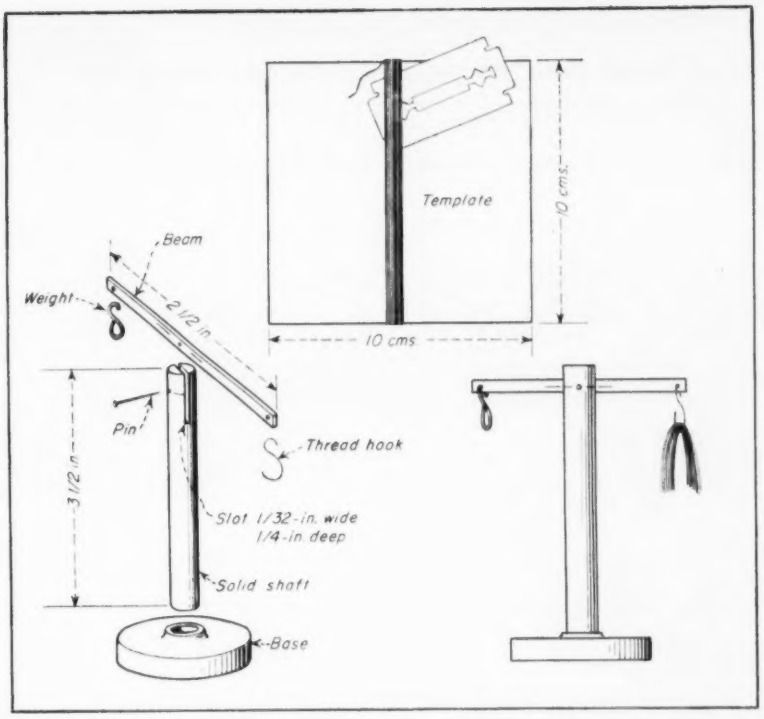
To make the balance, get a lock nut of about 1-in. diameter to use for the base. Take an old spindle, and cut out a 3½-in. section for the vertical shaft. Make a 3/32-in. notch ¼ in. into the top of the spindle section. For the beam of the balance, use a 2½-in. piece of a flat heddle.

Drill a tiny hole in the center of the beam and through the top of the shaft, as shown in the sketch. Be sure to get the hole high enough in the slot to allow the beam to swing freely. Drill holes at the ends of the beam to hold the yarn and the fixed weight.

Put a common pin through the shaft, the beam, and the other side of the shaft. Now you're ready to start.

Here's an example of how the balance works in determining deniers.

Cut a piece of steel or brass plate 10x10 cms. Wind the yarn on the board, and use a razor blade to cut the 10-cm. lengths off the board. (This template size should be varied to suit your yarn-numbering system. You might want a 10- or 12-in. template, for instance, if your system is based on yards.)



HOMEMADE YARN BALANCE is easily built and can be adapted to any yarn-numbering system.

Make a hook to hold the pieces of yarn. Weigh this hook, and then make the fixed weight. The weight should be 10 gms. plus the weight of the yarn hook.

Put the fixed weight in position, and add pieces of yarn until the beam balances. Divide the number of pieces into 9,000 to get the denier. If you have 60 pieces, for instance, the answer is 150 den. *A. Sactouris, Athens, Greece.*

$500 for Best Kink in 1953
$25 for Best Kink in Each Month

In Addition to Space Payment on Acceptance

You undoubtedly know many Kinks and Short-Cuts that are helpful to mill operators. Write them down and send them in. We pay promptly on acceptance—before publication. In addition, your Kink may win the $500 check for the best Kink of the year or the $25 check for the best Kink of the month; maybe both!

Send in your Kink now. There is always a contest going on. The more good Kinks you send in, the better your chances of winning a prize in addition to earning some easy money for every Kink accepted.

We will polish up your writing and will have an artist make finished drawings. But send in plenty of details so that your Kink can be clearly explained. Be sure your sketch is clear and well labeled, but it need not be a polished job. Best of all, send us a good glossy photograph of it—we will pay you extra if you do and we can use it.

Look over the Kinks in this and other issues. You will get ideas you can use as well as inspiration for Kinks you can send in. We like items that pertain to ways for improving machines, new devices that a mill man can build, attachments or methods of merit—anything that will cut costs, improve quality, or help production.

Your published Kink will be judged impartially by other mill men. In cases of ties, duplicate prizes will be awarded.

RULES OF CONTEST

1. No limit to number of entries.
2. New $25 prize contest every month, $500 prize contest for the year. Monthly contest confined to Kinks published that month, yearly to those published in calendar year 1953.
3. All Kinks paid for on acceptance; extra payment for photographs. Drawings need not be finished (clear detailed pencil sketches will do).
4. Previously published material not eligible for prizes.
5. Unless you advise to contrary, we assume we may sign your name to Kink when published.
6. Prize winners will be selected by readers, a different group each time. At least 200 will be asked to select preferred Kinks in each issue. Their votes will select the best Kink, and their decision will be final.

Send Kinks to:
KINKS CONTEST, TEXTILE WORLD
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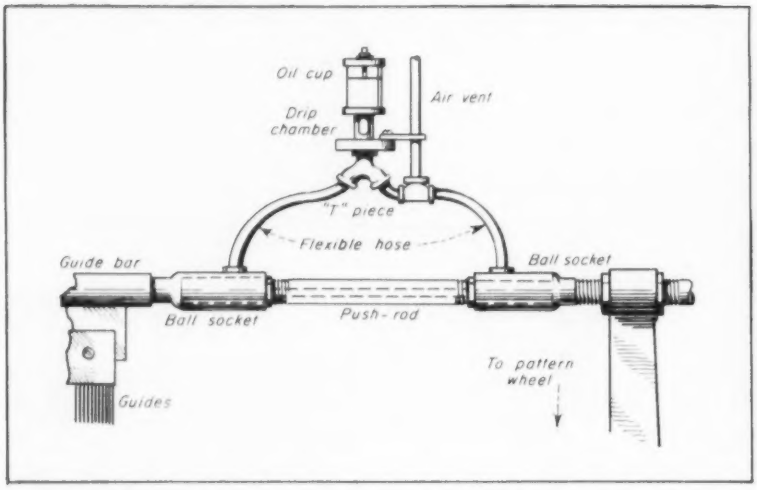
Kinks and Short-Cuts

Our Tricot Push Rods Get Continuous Lubrication



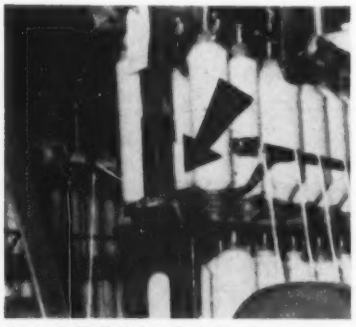
OIL RESERVOIR on older tricot machines assures constant lubrication of the push rods.

Hand oiling of our old tricot machines, which were not equipped with automatic lubrication of the guide-bar push rod, gave us a lot of trouble. Pinholes would sometimes be caused when rust at the ball sockets caused the guide bar to go out of adjustment.

An oil cup was put on the machine frame above the guide-bar push rods, and two flexible rubber tubes were run from the oil cup to the ball sockets at either end of the push rods. Each machine uses about 2 oz. of oil every 8 hrs.

Bad cloth has been reduced because the bars do not go out of adjustment. *S. I. Reber, Meriden, Conn.*

Buckets Help Doffers Keep Chalk Straight



ONLY ONE COLOR of chalk, the proper one for the yarn in the frame, is kept in the bucket (arrow) at a time.

Our doffers often used to mark yarn incorrectly, and the fault was partly ours because chalk was kept up on the creel and all colors collected up there.

So we tried fastening a wide variety of household pans and other easily obtainable containers on the end of the frame. The only thing that has worked so far is an "elevator" bucket.

The buckets, which come in a wide range of sizes, have two or three holes punched near the top at the back edge. We fasten them to the creel support at the head end. The size we've found best is 4½x2¼x2½ ins.

The front of these buckets slants forward at a convenient angle, and the doffer can grasp the chalk easily. Furthermore, we can easily check to see that each frame is supplied with the right color. *W. C. Gibson, Jr., Decatur, Ga.*

Use Brass Screws To Prevent Cracking of Carboloy Knives

Carboloy knives on looping machines are being used more and more on synthetic goods, and many knives are cracked by the ordinary steel screws. Too much tension is placed on the screws, and the knives crack because of their brittleness. Much damage can be prevented by using ¼-in. brass screws with 24 threads per inch instead of the usual steel screws.

Foot Wiper on Ladder Makes for Safer Climbing

FOOT WIPER on ladder is made from old bagging or rags and helps to prevent ladder accidents.

On maintenance work, it is dangerous to climb a ladder with muddy or greasy shoes, particularly if your soles are fairly smooth. Not only can your foot slip sideways along the rungs, but there is a strong possibility of your foot slipping off the rung entirely.

Another objection to climbing ladders when you are wearing dirty shoes is that the dirt may foul the ladder rungs. Mud, for instance, will cake and dry on the ladder rungs and will tend to drop off on finished work when the ladder is used indoors or on machines that should be kept clean.

Put a shoe cleaner on the bottom rung of the ladder, and you'll solve all these problems. Several layers of burlap or bagging is all you need. When the wiper gets dirty, just throw it away and wrap a new piece around. *Clifford T. Bower, London, England*

Remove Vibrator Comb With Aid of Iron Pipe

Removing a vibrator comb from a loom head usually takes about 2½ hrs. because all the vibrators must be taken out. The job can be done in a very few minutes by the use of a split pipe to hold the chain in place.

Split a length of 1-in iron pipe down the center, and place one-piece of the pipe over the chain. Then turn the chain until the chain and pipe are under the vibrators. The vibrator comb can then be slipped out and replaced. *Owen E. Stinnett, Jamestown, N. Y.*

ALSIMAG® GUIDES for Doublers

GIVE YOU: NO POINT OF SUDDEN FAILURE
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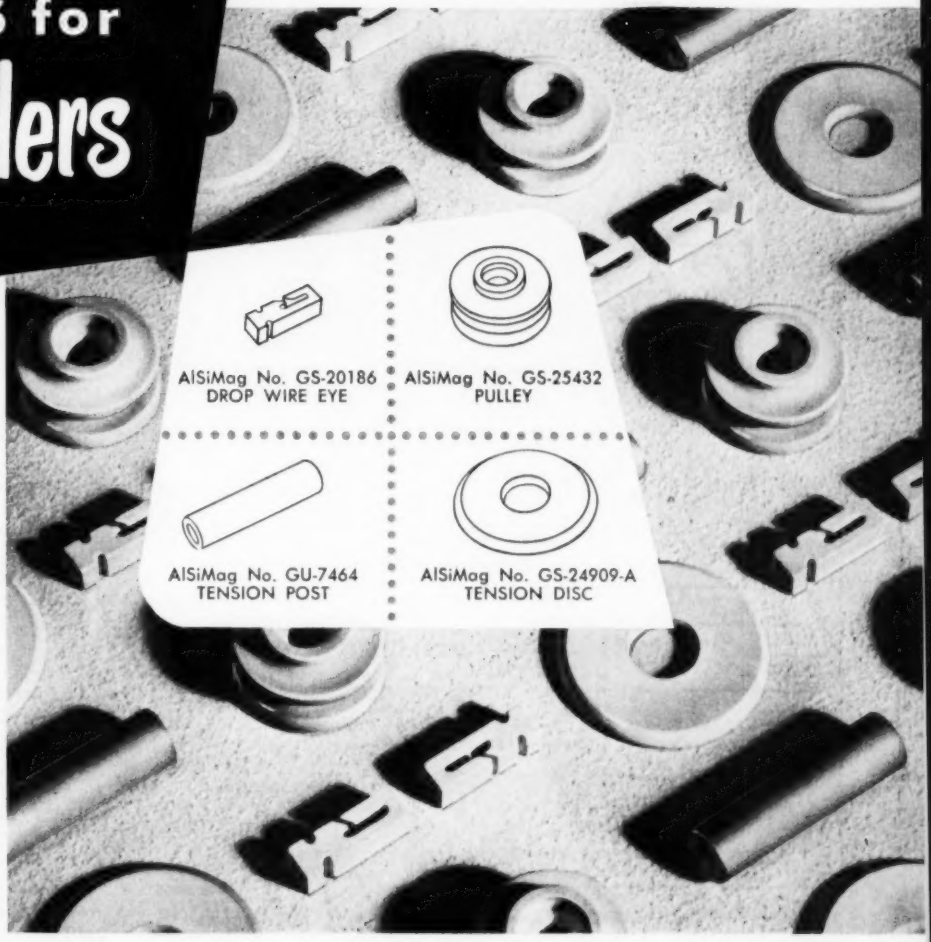
NO SECONDS DUE TO UNDETECTED GUIDE FAILURE
LOWEST GUIDE COST PER POUND OF YARN PROCESS



These hard, homogeneous AlSiMag guides permit you to run abrasive yarns at high speeds and high tensions. These guides are so hard that wear is very gradual. Since the material is homogeneous it has no surface "skin" to wear through and cause undetected yarn damage.

These AlSiMag guides have been used for many years by mills all over the country. Everywhere that cost figures have been made available to us, these guides have shown far longer life and their cost has been lower per pound of yarn processed.

If your process would be improved by a special guide, we can make it to your specifications. Test samples of special designs can be made at reasonable cost without tool or die costs. This enables you to try out your ideas with small investment.

*THESE **AlSiMag** GUIDES FOR DOUBLERS ARE STANDARD ITEMS AVAILABLE FROM STOCK. TEST SAMPLES ON REQUEST.*

Many mills have reported that it would be economically impossible to process synthetic yarns without these AlSiMag guides. Samples for tests will be sent without charge. Try these guides. Keep a record of costs and results. Let your own records tell the story.

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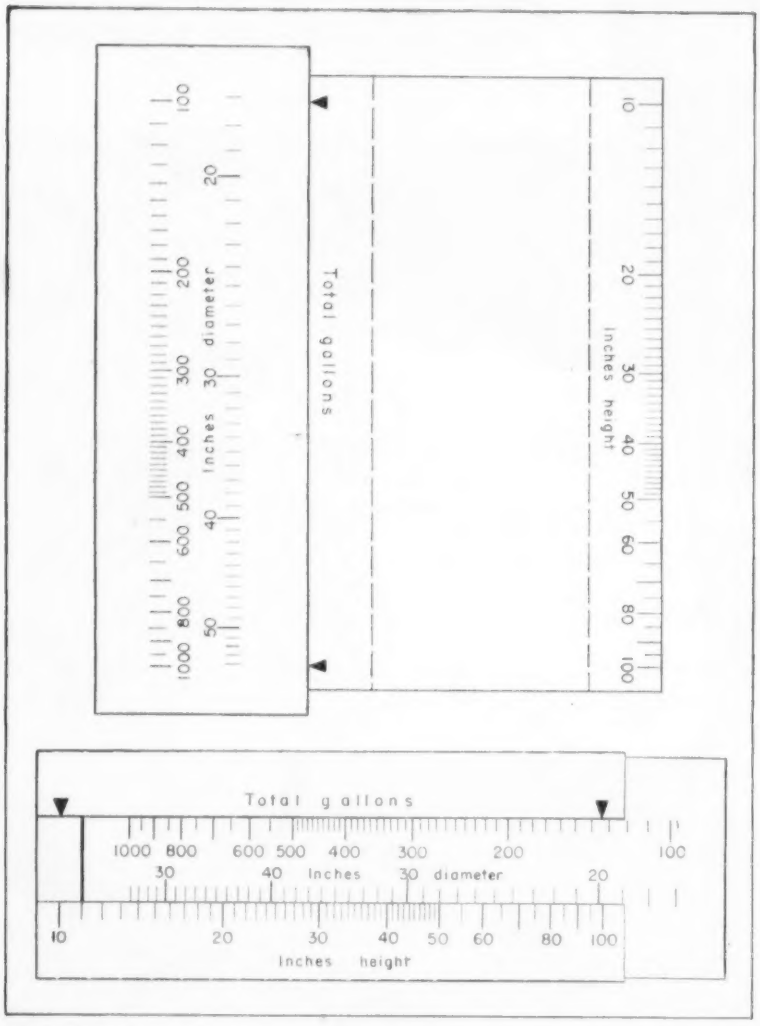
Here's a Handy Kettle-Volume Calculator



TO MAKE THIS CALCULATOR, cut along the heavy lines, fold along the dotted lines, and put the smaller piece inside the folds of the larger one. Set kettle diameter opposite size height, and you can read total volume opposite the arrows. Correct for the decimal point if necessary. *H. C. Olsen, New York, N. Y.*

Make Your Own Tweezers For Hard-to-Reach Jobs

A pair of tweezers is a handy tool to keep in your tool box. Tweezers can be used for picking small parts out of containers and for installing small springs.

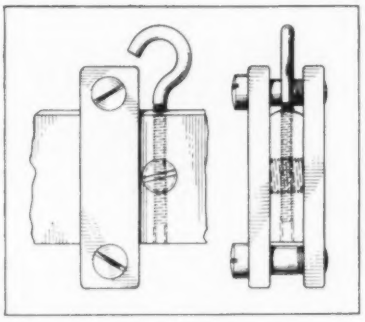
Tweezers are especially useful when shuttles are being repaired. Rubber bands can be easily put into shuttle eyes if a pair of tweezers is used. Springs, too, can be removed and replaced easily with tweezers.

A good pair of tweezers can be made from an old shuttle spindle. Cut the spindle off at the butt, and grind the split end down to the desired shape.

Grind the tip end down to a needle point to remove a broken piece of rubber band from the tension adjusting screw in a shuttle.

Since only old shuttle spindles that have no value are used to make the tweezers, several pairs in various shapes for different uses should be made. *Charles S. Bicksler, Lancaster, Pa.*

Repair Split Harness Frames Permanently With Setscrew



SPLIT HARNESS FRAME is repaired with a soft, headless setscrew tapped for a hook with machine-screw threads. The clamps are used to hold the damaged frame while the repairs are made.

When a harness frame splits and the hook for the harness cord pulls out, the frame can be repaired quickly and the harness will be stronger than when it was made.

We made a clamp to hold the harness frame to stabilize it while we make the repair. The clamp is made from two plates 1 in. longer than the width of the frame. The plates are bored on each end, and one of them is tapped to take $\frac{1}{2}$ fillister-head screws.

The plates are screwed around the harness frame $\frac{3}{8}$ in. from the center of the damaged screw hole. The harness is raised on one end and held in position with a screwdriver over the other harnesses and through the rib of the damaged harness.

The harness is held firmly to keep warp ends from being broken, and a $\frac{1}{4}$-in. hole is bored through the harness frame in the center of the damaged screw hole and in the center of the frame widthwise. The hole is tapped for a $\frac{5}{16}$-in., 18-thread, headless setscrew.

A soft setscrew is placed in the frame and held with a C-clamp to keep it from turning. A $\frac{33}{64}$-in. hole is bored through the setscrew from the top of the harness frame, and the setscrew is tapped with a $\frac{1}{2}$-in. tap.

A $\frac{1}{2}$-in. machine screw with a hook is inserted in the tapped setscrew to support the harness from the harness cord. Then the C-clamp and plates are removed.

The $\frac{5}{16}$-in. setscrew keeps the split frame from reopening and also holds the harness hook tightly and permanently. *Walter A. Simond, Essex Junction, Vt.*

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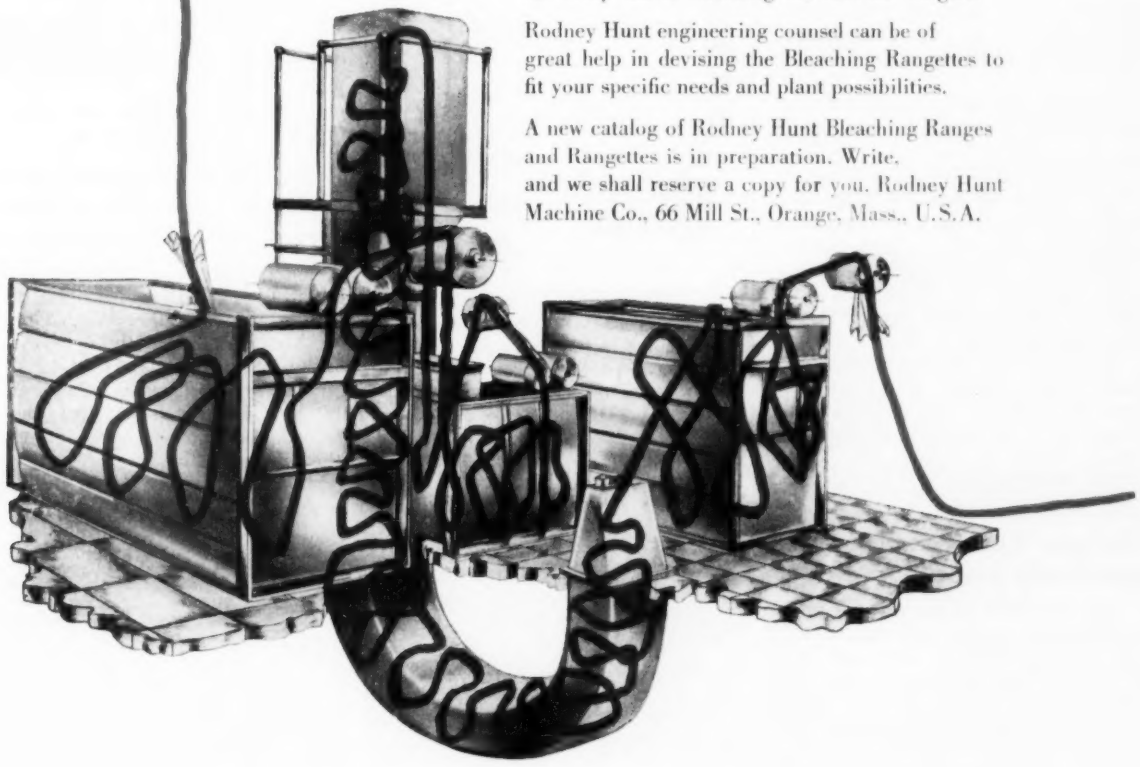
Rodney Hunt engineering counsel can be of great help in devising the Bleaching Rangettes to fit your specific needs and plant possibilities.

A new catalog of Rodney Hunt Bleaching Ranges and Rangettes is in preparation. Write, and we shall reserve a copy for you. Rodney Hunt Machine Co., 66 Mill St., Orange, Mass., U.S.A.



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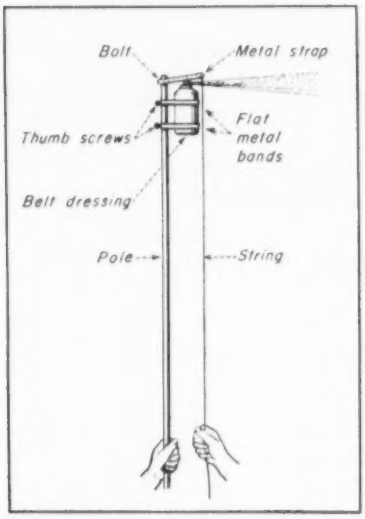
Spray High Belts Without a Ladder



SPRAYING BELTS AND PULLEYS can be done without the use of a ladder when a squirt-type can of dressing is used this way.

Here's a safe way to spray belt dressing on overhead belts and others that are inaccessible. You can spray the belts safely while they are running.

Get a can of belt dressing that sprays directly from the container. Attach a string to the end of the metal strap. A pull on the string releases the spray of belt dressing. The spray is easily directed onto the belt and pulley surfaces.

In addition to the important safety feature, this method eliminates ladders, saves time and tempers, and keeps the belts pulling at top efficiency. *Graton & Knight Co., Worcester, Mass.*

Sharpen Your Pencils On a Clip Board

When I first started making 8-hr. timestudies, I had trouble keeping my pencil sharp. I had to stay with one person in production work all day and did not have time to go to a pencil sharpener. Since my writing often had to be detailed and written in a small space, a dull pencil made my work untidy.

I made a pencil sharpener by gluing a piece of emery cloth to the back of my clip board.

Now my work is always neat and easy to read because I always have a sharp pencil. *Bernard H. Dixon, Danville, Va.*

Best-Kink Award for June

Each month TEXTILE WORLD awards $25 to the submitter of the Kink judged by a panel of over 200 practical mill men as the best for that particular month. A new batch of Kinks appears each month, and a new group of readers acts as judges each month.

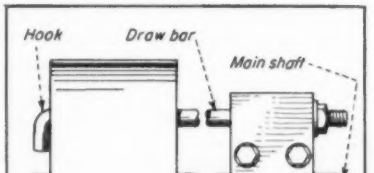
If you are asked to judge one of these days, be sure to help select the best Kink by sending back your answer in time for final tabulation. Closing date for judging is the last day of the month in which the Kink appears.

The best Kink for June, according to TEXTILE WORLD reader-judges, was:

"Ball-Bearing Sleeve Held by Lug on Collar"
By Joseph Nadeau, Box 627, Keene, N. H.

Mr. Nadeau is being sent a check for $25 with the compliments of TEXTILE WORLD.

It's Easy To Move a Pulley on a Shaft



FASTEN THE BRASS STOCK beside the pulley with two bolts on each side of the drive shaft. Insert the draw bars, put on the nuts, loosen the pulley setscrews, and turn the nuts with a wrench to move the pulley.

When we're driving several machines from the same line shaft, we often have to change the position of one or more solid pulleys when we relocate a machine. If pulleys are driven along the shaft with a hammer, the pulleys are often broken and the shaft is scarred.

We have made an attachment from brass stock that easily moves a pulley to any desired position without damage to the pulley or to the shaft.

Two pieces of brass stock 4 ins. thick, 4 ins. wide, and 12 ins. long have four ¾-in. holes drilled in each of them so that they can be fastened together on each side of the main line shaft with four machine bolts.

Each bar of brass has one hole bored at right angles to the four holes 1½ ins. from each end of the bar.

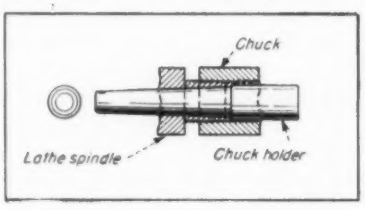
A 16-in. draw bar of ¾-in. dia., is bent 1½ ins. from one end to form a hook. The other end of the draw bar is threaded for 6 ins. so that a nut can be screwed on it.

When a pulley is to be moved, the brass bars are bolted to each side of the main shaft near the pulley. One draw bar is inserted through the pulley and through a hole at one end of one of the brass bars, and the other draw bar is inserted through the pulley and through the opposite end of the other brass bar.

Washers and nuts are placed on the draw bars, and the pulley is pulled along the drive shaft by turning the nuts alternately with a wrench.

The bars can be quickly attached to the shaft and quickly removed. Since the brass stock is flexible, the shaft is not damaged. *W. E. Warner, Essex, England*

Increase Chuck Capacity On Your Lathes



REVERSE THE CHUCK HOLDER so that the tapered end matches the lathe center, and chuck capacity will be increased. Before you reverse it, though, turn the straight part of the holder so that it is a close slip fit in the chuck to hold the chuck in perfect alignment with the spindle. *W. A. Simond, Essex Junction, Vt.*

Rayon Reports

New Technical Data Book Describes Proper Use of Avisco Textile Chemicals

As a service to the textile industry, American Viscose has just published a useful new 40-page, illustrated book, "Avisco Textile Chemicals." The book is designed to present tried and proved methods that will give standardized, practical mill procedures for obtaining end products of uniformly predictable quality. It applies to both natural and man-made fibers.

There is a full description of the uses of non-ionic waxes and other lubricants, as well as softening and anti-static agents developed by Avisco's Textile Research Department at Marcus Hook, Pa., in conjunction with the Atlas Powder Company. Extended tests provided the data.

FIBER PREPARATION

Chapter I explains the formulating of chemicals for preparation of fibers, to provide the desired lubrication, softening, and static control. It deals with cotton fibers, wool fibers on both systems, and man-made fibers.

YARN PREPARATION

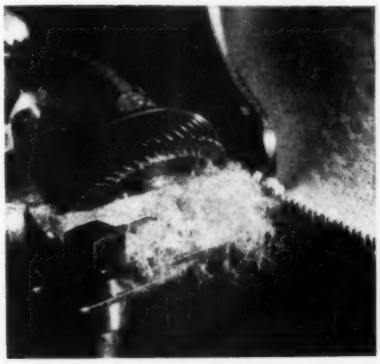
Chapter II covers preparation of yarns for knitting, weaving, and braiding, as well as the preparation of sewing threads. Emphasis is given to scoured and dyed yarns and their need for proper lubrication and sizing.

DYEING AND FINISHING

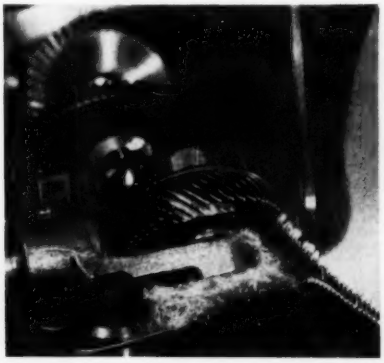
How the proper lubricants, softeners, and static-control agents are best applied during dyeing and finishing of fibers, yarns, and fabrics is the subject of Chapter III.

There is a detailed discussion of the Avcoset Process for stabilizing rayon and rayon blended fabrics, including proper methods of preparing and applying the Avcoset finishing solutions. Copies of the book are available on request.

How properly treated yarns cut fly waste



Non-lubricated yarn accumulates excessive fly during knitting; requires frequent costly machine stops for cleaning.



Yarn lubricated with Avcodisk synthetic lubricant during coning or winding greatly reduces fly. Cleaning time is cut up to 50%.

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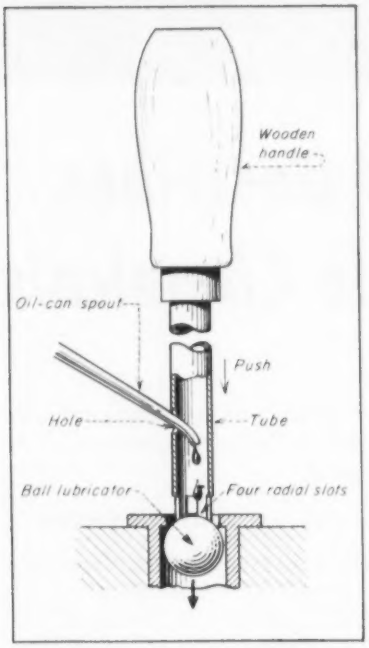
We Use a Regular Oil Can For Ball-Lubrication Points



ADAPTER FOR BALL LUBRICATORS allows a regular oil can to be used and also lets the oiler see the oil get into the lubricator.

Ball lubricators do a good job of keeping dirt out of bearings, but our oiler formerly had to carry several sizes of oil guns for them. It was also difficult for him to tell if the hole was getting any oil.

We overcame both of these objections with our special adapter. The gadget opens any size of ball joint and allows the oiler to see how much oil is going in from the oil can.

We took a short length of steel tubing, put a wooden handle on one end, and filed four slots in the other end. Outside diameter of the tube fits the smallest oiler we are likely to encounter. The tube has a hole in the side to allow a regular oil-can spout to be inserted.

In use, the slotted end of the tube is pressed down on top of the spring-loaded ball to push it down from the sealing position. Oil is then fed into the tube from the spout inserted in the side of the tube wall. The oil runs down into the lubricator, and the amount flowing in can be seen clearly so that there can be no doubt that the point has been positively lubricated. The one oil can is used for nearly all the oiling necessary on a machine. *Clifford T. Bower, London, England*

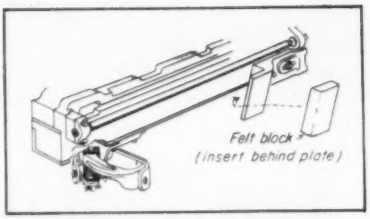
How Felt Bunters Protect Picker Sticks

We used to have a lot of trouble with our picker-stick bunters on C&K W-3 looms. Bunters hard enough to last for any great length of time soon broke our picker sticks. Soft bunters soon wore out.

We now use felt for bunters and have no more trouble. Felt $1\frac{3}{8}$ ins. thick is cut into pieces $2\frac{1}{2}$ ins. wide and $4\frac{1}{2}$ ins. long. These pieces are clamped into place on both the head-end and drive-end lay ends.

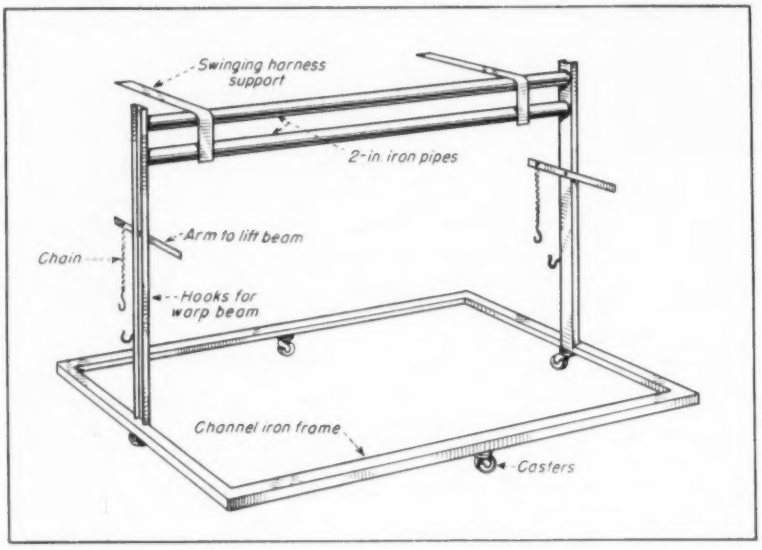
The felt forms a soft cushion to stop the picker stick at the end of the forward stroke, and few picker sticks are broken.

The felt blocks are as cheap as the bunters we formerly used and last as long. Since picker sticks last longer, weave-room maintenance costs are lower. *A. Keith Fawcett, Huntingdon, P. Q.*



FELT BLOCK can be used on both the head end and drive end of C&K W-3 looms to increase the life of picker sticks.

This Warp Truck Eliminates Manual Lifting



THE BEAM IS LIFTED by the lever fastened to the truck's upright girder. A chain with a hook on the bottom is fastened to the short end of the lever to lift the warp beam.

Our warp men and tying-in machine men were always in danger of having their backs hurt when they placed warp beams in the loom-beam bearings.

We designed a truck to place drawn warp beams or tie-beams in our looms. To a regular steel warp truck we added an arm to lift the beam and a swinging rack to hold the harnesses.

We bolted an arm to the inside of the upright channel-iron girder on each end of the truck. The arm has a chain connected to the short end with a hook on the end of the chain. When the beam is to be lifted, the hook is fitted to the beam gudgeon, and the arm is pulled downward. The truck is moved to position the beam gudgeon inside the let-off on a C&K S-model loom or over the beam bearing on Draper looms.

The cross girder directly below the top cross girder was removed from the truck and a length of $1\frac{1}{2}$-in. channel iron was bent around the girder, one on each end, so the channel iron would swing on the girder. The girder was replaced on the truck. The channel iron was bent at a right angle over the top cross girder.

An extension for the channel iron was made from a piece of strap iron that was slotted and fitted with two wing nuts and bolts to be used for drawn warps with 4 to 24 harnesses.

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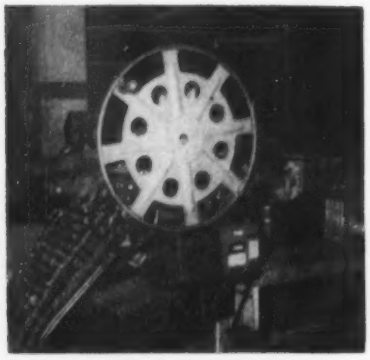
3-2

Large Handwheel on Head Motion Helps Weaver Move Harnesses



LARGE HANDWHEEL permits the weaver to pull back the lay or change harnesses to remove broken picks by hand with little physical effort.

Many of the fabrics we weave on our C&K W-3 pick-and-pick looms require 25 harnesses. On weaves of this type, our weavers find it hard to move the head motion by hand when they are leveling the harnesses or taking out broken picks.

We installed a larger handwheel to make it easy for the weaver to move the harnesses. The handwheel is made from a metal handwheel taken from the crankshaft of a W-3 loom.

The center of the handwheel is machined out to fit a 2-in. sleeve. The sleeve is 5 ins. long and is keyed to the handwheel and fastened with a setscrew.

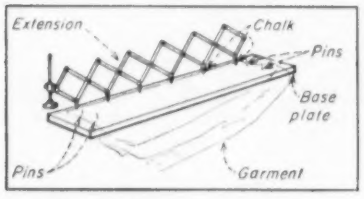
The other end of the sleeve is drilled to fit over the end of the top cylinder (1⅞-in. hole) in place of the regular handwheel. A setscrew holds the sleeve to the top cylinder.

We bored a ⅜-in. hole in the outside rim of the handwheel to hold a handle.

The handle is made from hardwood and is turned on a lathe to the same general shape of the handle on a regular handwheel. The finished handle is 4 ins. long and 1½ ins. in diameter. A ⅜-in. hole is drilled through the center of the handle. The handle turns on a ⅜-in. bolt that fastens it to the handwheel.

The old handwheel was 12½ ins. in diameter; the new one is 20 ins. Since the new handwheel has greater leverage, the weaver has to use less effort when he turns the harness by hand. *Leslie D. Hayter, Huntingdon, P. Q.*

This Gadget Saves Time In Marking Buttonholes



EXPANSION GADGET similar to the old wall-type telephone swing bracket is equipped with chalk to mark buttonholes in knitted garments.

Buttonholes in knitted garments are usually marked by placing a rule along the buttonhole line.

This work can be speeded up with a device that is made from a Tyrack specific extension, which can be obtained from a stationery store.

The extension device is fastened to a wooden base to allow a sideways movement, and a piece of marking chalk is fastened to the arms of the extension. The wooden base is a board 24 ins. long, 10 ins. wide, and 1 in. thick.

Four pins are fixed in the plate, and the garment is placed on the pins. The extension is swung over the garment and pressed down to mark the buttonholes. The device is then swung back to its original position, and the garment is removed.

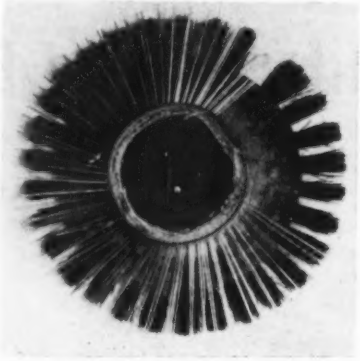
The length of the extension determines the distance between the holes and can be adjusted to suit any type of garment. *Dan Singer, Philadelphia, Pa.*

Cleaner Looping Job Done With Homemade Brush

I had some difficulty in cleaning out the stitches on coarse-gauge socks that have a nylon reinforcing thread.

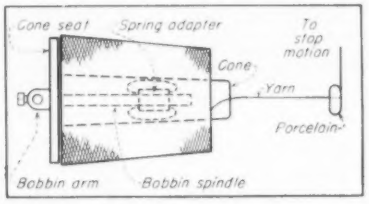
I improved the looping job by cutting a ¼-in. strip of fancy card clothing (which I got from a worsted carder) and tacking it to the brush hub after I had cut off half the bristles. I left half the bristles on for nylon and cotton work, but for mercerized yarn I found that if I put all card clothing and no bristle I got a better job.

It was not necessary to put the brush down to touch the points. *Henry Gregeau, Wilmington, Mass.*



LOOPER BRUSH is made more effective for coarse-gauge cotton hosiery with nylon splicing by substituting card-fancy clothing for part of the bristle.

Trapped Yarn Under Cones Can Be Prevented



CIRCULAR-KNITTED CONE HOLDERS are turned 90°, and the rayon cones are pushed onto spring adapters so that the yarn does not catch under the base of the cone.

We have tried all sorts of devices to prevent our rayon yarn from becoming trapped under the cones as they sit on the bobbin rack of our circular knitting machines, but this method is the best yet.

We borrowed some spring adapters from our tricot-warping department and slid them onto the bobbin spindle. The cones were pushed onto the adapter springs and were held firm on the spindle. The screw holding the bobbin holder was loosened, the cone and the bobbin rack turned 90°, and the screw tightened. The spider hub holding the porcelain rods was pushed down so that the porcelains were opposite the cones.

The quality of knitting has improved because there are fewer tight places caused by the yarn pinching at the base of the cone, and our press-offs and stoppages have also been reduced.

...and

go to a specialist for stainless

When it comes to stainless steel, no one has had broader experience in working out metallurgical, fabrication and application problems than Crucible. Stainless is actually a group of *special* steels. And we have been the world's largest producer of all types of special steels for 53 years.

Our technical staffs and field representatives are available to help you select the grade, size or finish that is most practical and economical for your product or processing operation . . . with due consideration for fabricating problems as well as service use.

Besides our broad technical service, you get as fine a quality stainless steel as is made because Crucible REZISTAL stainless is produced in mills that were built exclusively for producing these corrosion and heat resistant steels.

So for competent technical advice and quality stainless, call Crucible.

CRUCIBLE first name in special purchase steels

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53 years of Fine steelmaking

CRUCIBLE STEEL COMPANY OF AMERICA, GENERAL SALES OFFICES, OLIVER BUILDING, PITTSBURGH, PA.

REX HIGH SPEED • TOOL • REZISTAL STAINLESS • ALLOY • MAX-EL MACHINERY • SPECIAL PURPOSE STEELS

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PITTSBURGH VAT DYES

PITTSBURGH-VAT Flavone GC Paste
PITTSBURGH-VAT Flavone GC Paste for Printing
PITTSBURGH-VAT Golden Yellow GK Double Paste
PITTSBURGH-VAT Golden Yellow RK Double Paste
PITTSBURGH-VAT Dark Blue BO Paste
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PITTSBURGH-VAT Blue GCD Double Paste
PITTSBURGH-VAT Blue GCD Double Paste for Printing
PITTSBURGH-VAT Jade Green B Double Paste
PITTSBURGH-VAT Jade Green BD Double Paste
PITTSBURGH-VAT Olive Green BN Double Paste
PITTSBURGH-VAT Olive Green BD Paste
PITTSBURGH-VAT Olive R Double Paste
PITTSBURGH-VAT Olive T Paste
PITTSBURGH-VAT Olive TR Paste
PITTSBURGH-VAT Khaki GG Paste, Double Paste
PITTSBURGH-VAT Brown G Double Paste
PITTSBURGH-VAT Brown GG Double Paste
PITTSBURGH-VAT Brown BR Paste
PITTSBURGH-VAT Brown R Double Paste
PITTSBURGH-VAT Brown RD Double Paste
PITTSBURGH-VAT Black BB Double Paste

You can count on these BASIC advantages:

1 **BASIC POSITION**
Enables us to control dyestuff manufacture from coal to finished product, assures you of maximum, uniform quality and dependable supplies.

2 **MODERN PLANT**
Completely equipped with stainless and glass-lined reaction vessels plus automatic control and materials handling equipment . . . to maintain peak dyestuff purity and maximum production efficiency.

3 **COMPLETE QUALITY CONTROL**
Provided by modern, completely equipped laboratories where all production and application processes can be duplicated on a laboratory scale.

4 **EFFICIENT CUSTOMER SERVICE**
Provides you with laboratory or plant assistance in the application of Pittsburgh Dyes. ● Let us work with you on your dyestuff problems.

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. . . OUTSTANDING TRADE LITERATURE reviewed on the next and following pages

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New Textile Equipment
New Dyes & Chemicals
New Useful Accessories
Editorial Articles
and the Advertisements

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TEXTILE WORLD, A McGraw-Hill Publication, New York 36, N. Y. AUGUST, 1953

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TEXTILE WORLD, A McGraw-Hill Publication, New York 36, N. Y. AUGUST, 1953

Outstanding TRADE LITERATURE *Free for the Asking*

NO REPEATS . . . Listed here for August are current bulletins reviewed by the editors of TEXTILE WORLD. To get the ones you need, circle the number on the Reader-Service card, as described on the preceding page.

TEXTILE MACHINERY and AUXILIARY EQUIPMENT

A dye kettle, stainless steel and totally enclosed, is described in a bulletin made available by Riggs & Lombard. The machine is said to handle a wide range of fabrics, have the right ratio of dye liquor to cloth, reduce slips, give good ballooning, and minimize tangles. **(F-1)**

Machinery for knitting, weaving, and dyeing, new and used, is described in a catalog prepared by Morris Speizman Co., Inc. The makes and models are described in one section, and another section lists machinery for sale by lot numbers. **(F-2)**

A single-needle lockstitch sewing machine is described in a bulletin prepared by Singer Sewing Machine Co. The machine is supplied in three sizes for light, medium, or heavy work with a stitch length from 5½ to 7 per inch. **(F-3)**

A single-thread chain-stitch sewing machine is described in another bulletin from Singer Sewing Machine Co. The machine, Class 240w., has a maximum speed of up to 5,000 rpm, and is supplied in three sizes. Two of its uses are stitching work gloves and sewing labels. **(F-4)**

A conditioner for yarn conditioning and twist setting is described in a bulletin from Industrial Dryer Corp. The machine is adapted to handle silk, rayon, nylon, cotton, woolen, and worsted yarn on spools, bobbins, shafts, cones, tubes, cops, or quills. **(F-5)**

Fire extinguishers are described in a bulletin from Randolph Laboratories, Inc. Carbon-dioxide trigger-operated extinguishers are available in 2½- to 20-lb. hand models and 26-, 50-, and 100-lb. wheeled models. Soda-acid and carbon-tetrachloride extinguishers are also described. **(F-6)**

A potentiometer recorder for rapidly changing variables is described in a data sheet from Minneapolis Honeywell Regulator Co. The pen traverses the 11-in. chart in ½ sec. The instrument is suitable for Streakmeter application. **(F-7)**

A magnetic yarn brake for warpers is described in a bulletin put out by General Electric Apparatus Div. The brake is said to simplify presetting and to hold stalled tension. The same tension can be precisely duplicated. **(F-8)**

A weight indicator that is hooked to a hoist to indicate the load weight as the load is handled is described in a bulletin from W. C. Dillon & Co. The use of the weight indicator eliminates a separate weighing operation. The scale with 500-lb. capacity costs $205. **(F-9)**

An electronic metal detector is described in a bulletin from Radio Corp. of America. The instrument inspects for metal and signals its presence, but it does not actually remove the metal. The features of the detector are high sensitivity and penetrating ability. **(F-10)**

Automatic doors are discussed in a bulletin put out by Stanley Works. Push-button, pull-cord, floor-switch, and photoelectric controls are described, and several textile installations are shown. **(F-11)**

A hosiery-welt printing machine is described in a bulletin by Markem Machine Co. The machine prints hosiery data such as denier, size, etc., at any speed up to 100 printing strokes per minute. **(F-12)**

Air-operated controllers for variables such as pressure, temperature, flow, etc., are described in a bulletin from The Bristol Co. A time-program controller is described, as well as the other types of controllers. **(F-13)**

A sewing-machine table that has an insert for rapid changing of sewing machines is described in a bulletin from Singer Sewing Machine Co. The machines are mounted on uniform bases that fit the table. **(F-14)**

SUPPLIES and CHEMICALS

Brushes for textile mills are featured in a poster put out by Gastonia Brush Co. Brushes for combs, cards, looms, spinning frames, floors, and general uses are illustrated on the poster. **(F-15)**

A rubber wheel for industrial trucks, dollies, and racks is described in a bulletin prepared by The Rapids-Standards Co., Inc. The tire has steel-band backing, a sealed bearing, and a grease reservoir; the tire is replaceable. **(F-16)**

Plastolein 9057 Diox, a plasticizer that is applicable to calendered and dispersion-coated fabrics, is described in a bulletin from Emery Industries, Inc. A

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Need low starting friction and long bearing life?

here's how leading manufacturers of business machines

get them with **NEEDLE BEARINGS**

Torrington Needle Bearings are essential design features of many business machines because of their low starting and running friction, their long trouble-free service.

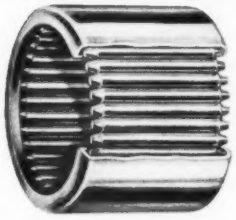
They have been *performance-proved* by years of day-in and day-out service on such machines as electric typewriters, addressing and duplicating machines, accounting machines, rotary card file systems, etc.

On the conveyor rolls, sprockets, gears, tape and feed roll shafts of duplicators, for example, Needle Bearings help reduce power requirements and keep motor size to a minimum. The Needle Bearing's turned-in outer lips effectively retain lubricants to keep these precision machines running for long periods without servicing.

The Torrington Needle Bearing has become "standard equipment" on countless products throughout industry since its introduction nearly twenty years ago. Its small size and infrequent lubrication needs are of great advantage in compact, tightly encased designs.

Perhaps the Needle Bearing can solve your anti-friction problems. Our engineers will be glad to work them out with you.

THE TORRINGTON COMPANY
Torrington, Conn., South Bend 21, Ind.

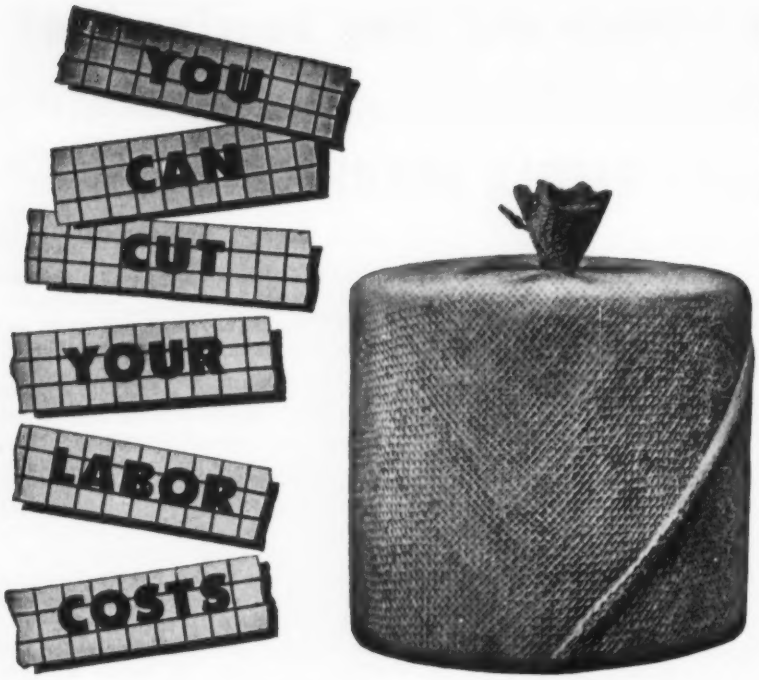


TORRINGTON *NEEDLE* **BEARINGS**

Needle • Spherical Roller • Tapered Roller • Cylindrical Roller • Ball • Needle Rollers

Trade-marks of some of the business machine manufacturers whose products enjoy the benefits of Needle Bearings.

DITTO · IBM · UNDERWOOD · Remington Rand · PITNEY BOWES · Burroughs · Diebold · Addressograph-Multigraph · Cummins-Chicago Corp. · A·B·DICK DUPLICATING PRODUCTS · National

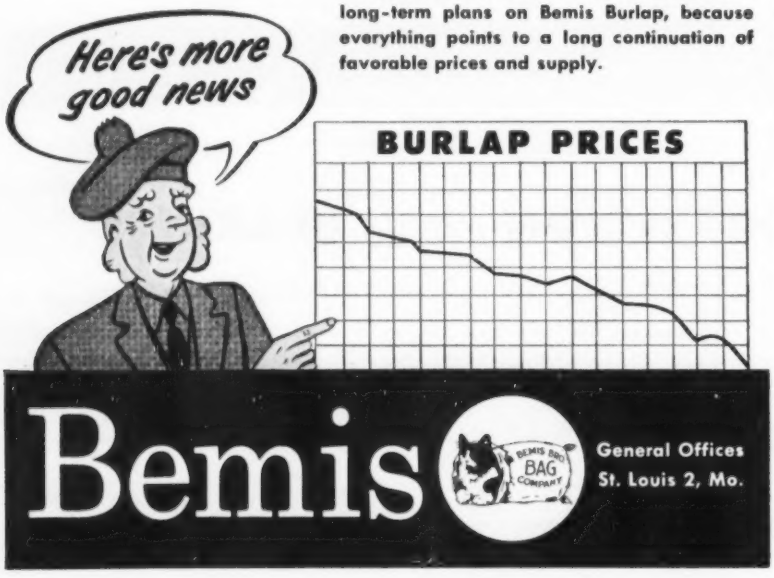


Use Bemis Tite-Fit Tubing!

Bemis Tite-Fit Tubing . . . the spiral-sewn burlap tubing with the 2-way stretch . . . is the fastest, easiest, most economical wrapping for rolls or bales of goods. Ask the Bemis Man to demonstrate.

Whatever your needs, we can furnish mixed carloads of burlap piece goods in a wide assortment of widths and weights.

Prices are down! What's more, you can build long-term plans on Bemis Burlap, because everything points to a long continuation of favorable prices and supply.



Bemis

BEMIS BRO. BAG COMPANY

General Offices
St. Louis 2, Mo.

every three months. We are now turning the gears for the first time after a year of operation, and they show little wear. We believe the gears will last three or four years."

Mill 2. "We used to have a lot of bearing trouble on our Diehl drives, but all the trouble has been eliminated.

"We use conventional gauges to check drive settings."

Mill 3. "We have been using Diehl drives since 1949 and now have the drives on 400 X-2 looms. Our 46-in. looms run at 172 ppm. and our 60-in. looms run at 162 ppm.

"The drives require little maintenance, but we inspect them frequently. We do not turn the transmitter gears every 90 days. The gears don't seem to wear."

Mills Continue Experiments With Plastic Filling Bobbins

What experience have you had with plastic quills?

Mill 1. "We bought 900 plastic quills about nine months ago. They were satisfactory in weaving and spinning. After we checked the quills for awhile, we mixed them with other quills.

"Now, about half the quills are gone. Since they are very pretty, we think they have been taken for this reason.

"The quills did not warp, and the rings are still tight, but the butts are becoming soft. The plastic quills are stripped along with wooden quills in a Terrell quill stripper without apparent damage.

"Plastic quills are about 50% higher in price than good wooden quills.

"We plan to buy 9,000 more plastic quills soon for further tests."

Mill 2. "We bought 1,000 plastic quills and mixed them with 3,000 wooden quills. Some of the plastic quills are crooked, apparently from bad transfers at the loom, but they aren't damaged when filling is conditioned."

Cut Pressers in Tricot

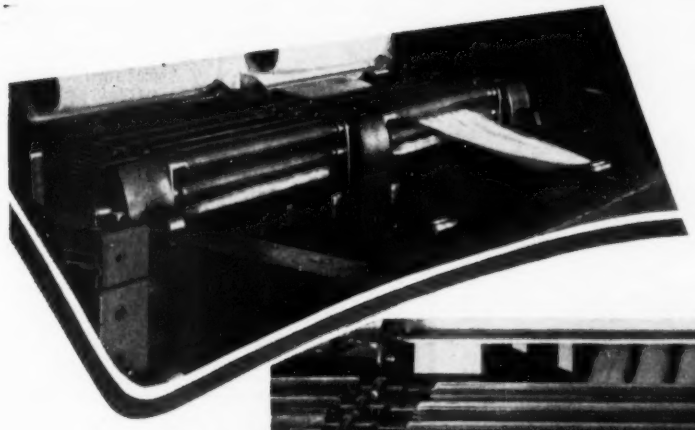
(*Continued from page 102*)

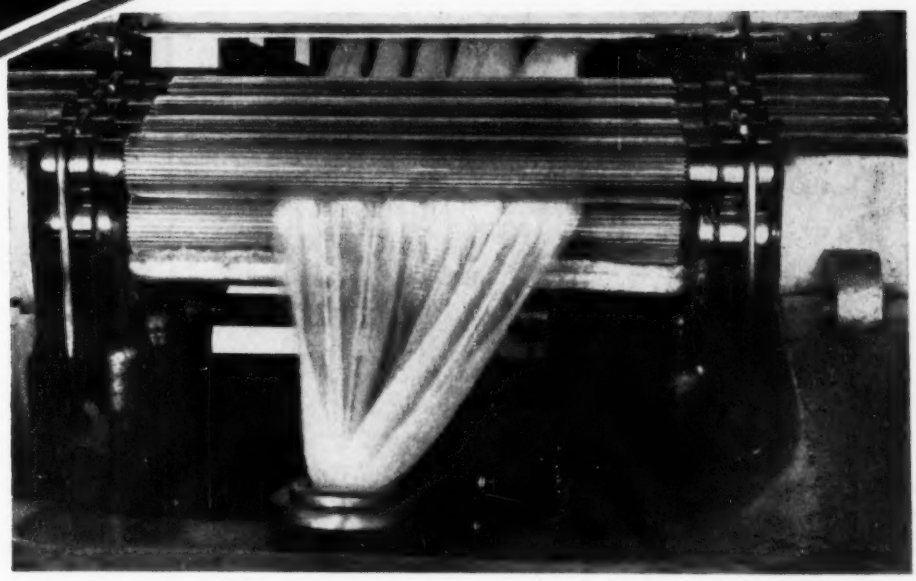
Cut-presser machines are frequently used to produce spot and knop effects in solid color or in two or more colors. These effects are made with a cut presser working in conjunction with a plain presser.

The steps for controlling the position of the plain presser are not the same on all machines, but the step

For more information, write direct or use Reader Service post card.

We Can Prove Our Claims Before You Buy





Ideal High Speed Ball Bearing Drawing Rolls*

We can prove to you that Ideal's High Speed Drafting System produces better quality roving—before you buy a single roll.

Bring or send us a sample of your carded or combed sliver (not over 20 pounds) together with your specifications. This stock will be processed in our pilot plant and returned for your critical examination. We cordially invite your personnel to be present when this stock is run.

Without exception, such sample runs have shown impressive improvement in evenness, breaking strength, and depth and permanence of crimp. Fibre damage is also greatly reduced. The accuracy of these findings is backed up by records kept on thousands of Ideal units operating in hundreds of mills.

Those mills which have followed their processed fibre through to the finished goods report better running work, fewer ends down, and fewer seconds in finished goods.

These advantages alone make Ideal Drawing Rolls your logical buy. In addition, mills using them report about 40% greater production per frame and well over 50% reduction in maintenance costs—against the very best performance of conventional type drawing. Let us process samples of your sliver now. Then, when you are ready to consider replacement of old rolls, we will equip one of your frames with Ideal Ball Bearing Drawing Rolls and let you judge their performance for yourself.

Let us demonstrate the advantages of Ideal Drawing Rolls. No obligation.

*Patented

Ideal Industries, Inc.
Bessemer City, N. C.

For more information, write direct or use Reader Service post card.

IMPROVEMENT IN FABRIC AT A LOWER COST OF MANUFACTURE

SAVE ON WASTE

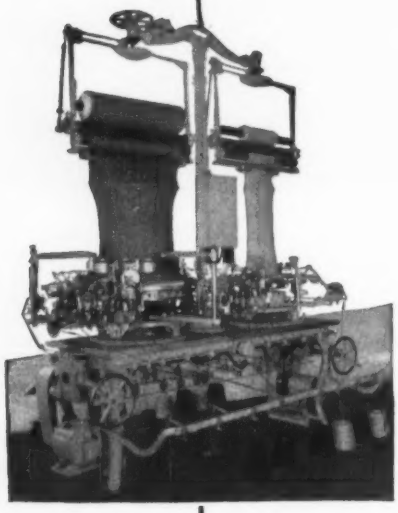
SAVE ON LABOR

SAVE ON NEEDLES

many mills call it the "perfect cloth machine"!

ACTUAL MACHINE COMPARISONS

have opened the eyes of many knitting mill owners to the virtues of the new Tompkins D-2. New stop motion with furnishing wheels control each end of yarn and prevent imperfect feeding of yarn to needles — IMPERFECTIONS ARE CAUGHT BEFORE THEY GET INTO THE CLOTH! Yarn tension always remains constant and steady for delivery from furnishing wheels—for a reduction of at least 50% in needle replacement expense!



ONE OPERATOR running Tompkins D-2 Double Head Spring Needle Machines (pictured) WILL TURN OUT TWICE AS MUCH FABRIC as one operator running Multiple Feed Latch Needle Machines with same number of bobbins —plus PERFECT CLOTH ALL THE WAY!

The Tompkins D-2 Double Head Spring Needle Knitting Machine is equipped with individual motor and drive for each head. Optional equipment available includes a three-color (3-thread) striper as well as a fool-proof pattern attachment for putting in or taking out a pattern.

Write, phone or wire for data sheet showing actual machine comparisons . . .

see the TOMPKINS D-2 in production on whatever yarn or fabric you wish . . .

SEE FOR YOURSELF!

ESTABLISHED 1846

TOMPKINS BROS. CO.

629 Oneida St. SYRACUSE 4, N. Y.

0 used in the accompanying illustrations is to hold the presser away from the needles. Step 8 puts the presser into action. Step 4 is an intermediate step. The step on the right of each pair of presser steps of the machine setup operates the beards of the needles that have received new overlaps.

When there is more than one partially filled guide bar, the threaded guides are shown in the positions they occupy relative to one another when they are resting on the first step of their respective chains or wheels.

Exploring the Community

(*Continued from page 137*)

cient on the job if we know our children are safe and well."

In all probability similar clinics could be set up in every mill community in cooperation with county or city boards of health at small cost to the mill.

If one is established it should be publicized through local newspapers, company house organs, churches, and parent-teacher organizations so the purpose and facilities of the Station are thoroughly understood.

Can you imagine a finer sentiment than that of the young mother who so aptly described a special type of community morale often aimed for but not frequently maintained?

Dyeing, Finishing Developments

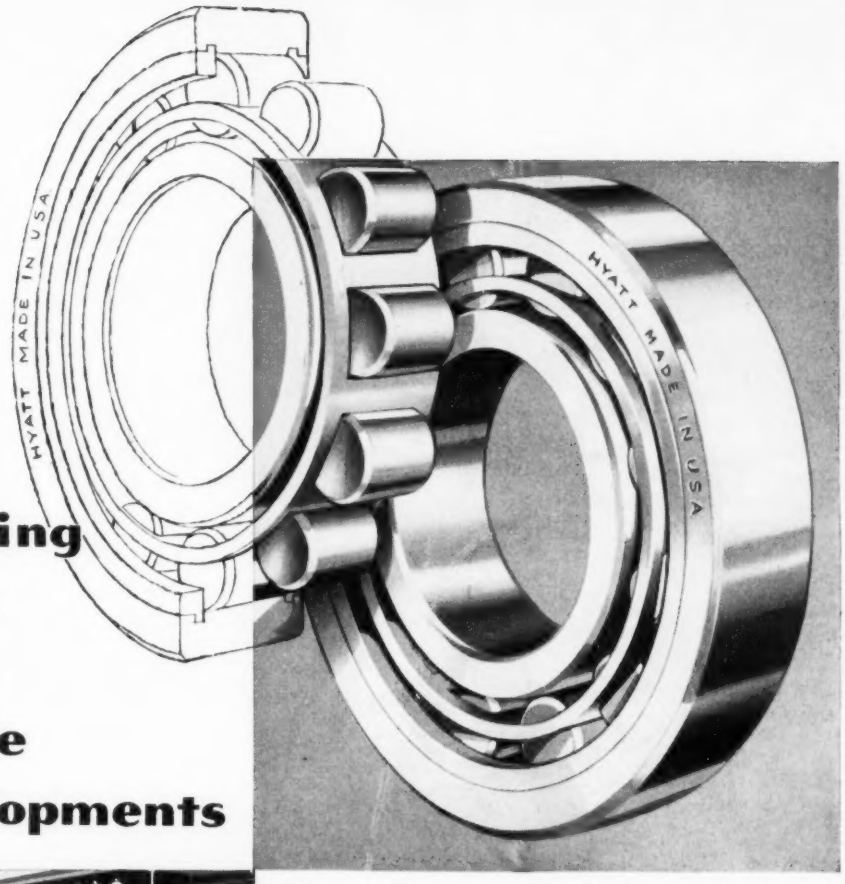
(*Continued from page 119*)

Flameproofing of rayon materials has received much attention, and a recently announced new chemical, THPC, developed by Southern Regional Research Laboratory, offers new hope that cellulosic fibers may yet attain complete acceptance as flame-resistant textiles.

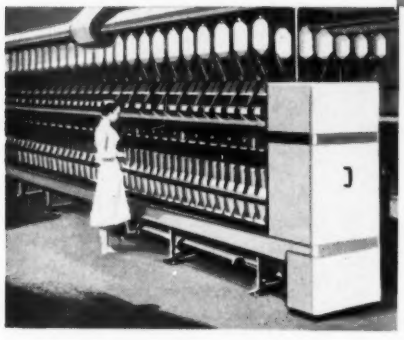
Drying of cloth with superheated steam, made possible by a new design of tenter clip and a Swiss patent, was revealed recently by James Hunter Machine Co. in an installation at Cliffside Dyeing Corp. in Paterson, N. J.

Modification of natural fibers and synthetic materials by application of a dispersed nylon polymer to the woven cloth has been talked about for some time. Little success has been achieved along this line, and the project has evidently been abandoned.

New efforts have been directed by various companies toward development of soil-resistant treatments, new



Keeping pace with textile developments



Hyatt precision bearings

Throughout the textile industry, modern methods and Hyatt-equipped machinery are making possible the production of higher quality yarn and cloth at lower cost. Builders of looms and preparatory and finishing equipment know that by using Hyatt bearings they can offer the advantages of faster machine operations, reduced power costs and minimized lubrication problems. If Hyatts are not standard equipment on the machines you purchase, they can be had upon specification—or used for changeovers. For data about Hyatt bearing performance, write to Hyatt Bearings Division, General Motors Corporation, Harrison, N. J.

HYATT ROLLER BEARINGS

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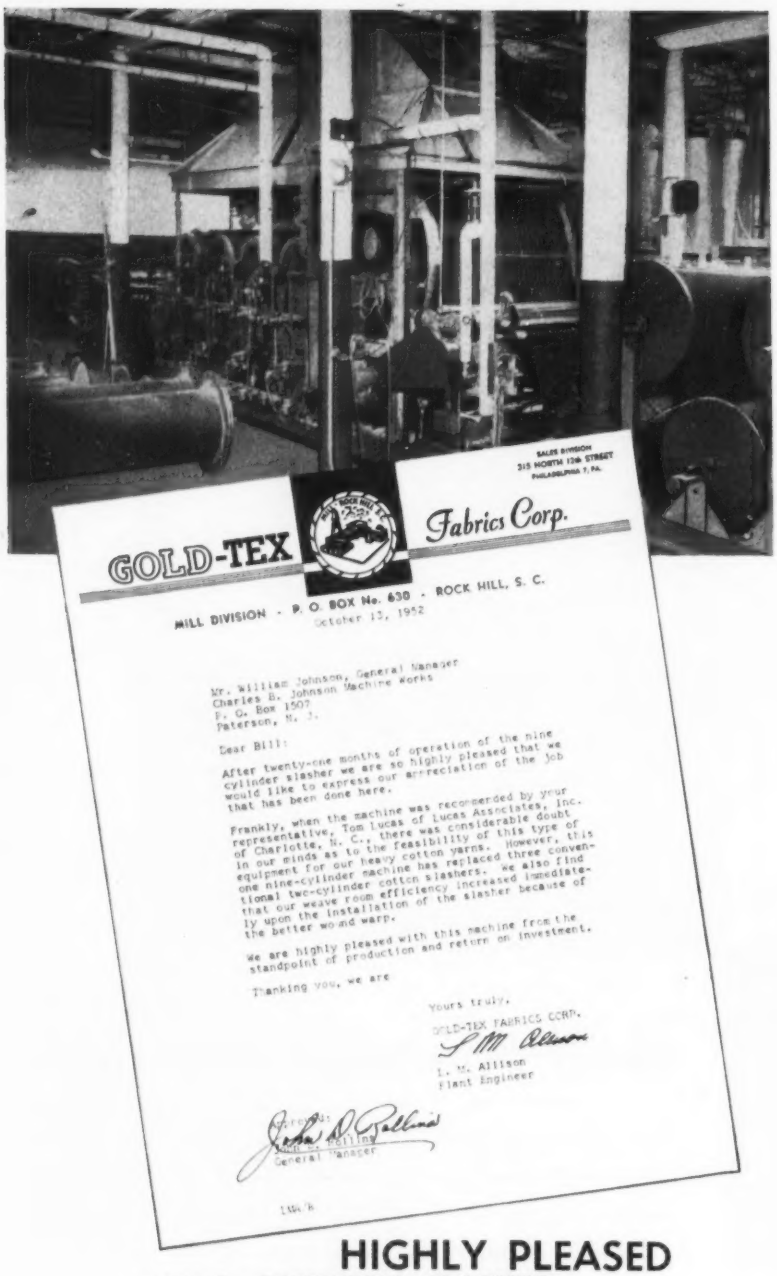
GOLD-TEX
Fabrics Corp.
MILL DIVISION - P. O. BOX No. 630 - ROCK HILL, S. C.
October 12, 1952
Mr. William Johnson, General Manager
Charles B. Johnson Machine Works
P. O. Box 1507
Paterson, N. J.
Dear Bill:
After twenty-one months of operation of the nine cylinder slasher we are so highly pleased that we would like to express our appreciation of the job that has been done here.
Frankly, when the machine was recommended by your representative, Tom Lucas of Lucas Associates, Inc. of Charlotte, N. C., there was considerable doubt in our minds as to the feasibility of this type of equipment for our heavy cotton yarns. However, this one nine-cylinder machine has replaced three conventional two-cylinder cotton slashers. We also find that our weave room efficiency increased immediately upon the installation of the slasher because of the better wound warp.
We are highly pleased with this machine from the standpoint of production and return on investment.
Thanking you, we are
Yours truly,
GOLD-TEX FABRICS CORP.
L. M. Allison
Plant Engineer
General Manager

HIGHLY PLEASED
With JOHNSON SLASHER
Says GOLD-TEX "This one nine-cylinder machine has replaced three conventional two-cylinder cotton slashers . . .

Weave room efficiency increased immediately . . .

Highly pleased from the standpoint of production and return on investment" says GOLD-TEX.

Full story on request.

Charles B. Johnson

MACHINE WORKS

PATERSON **NEW JERSEY**

novel-effect fabric finishes, and special dyes that create water-repellent properties in fabrics. More will be heard about these projects when information is available.

Dyeing Fiber Blends

(*Continued from page 125*)

colors, chrome colors, or the new types of premetallized colors. The bath should be maintained with additions of ammonium sulfate or acetic acid at a pH of 5 to 6 during the first 30 mins. of dyeing to prevent tarring the acetate dyestuffs and staining the wool. If chrome colors are used for wool, the dyebath is acidified after 30 mins. of boiling and the bichromate is added in the usual manner.

This method, although used on a commercial scale, is not completely satisfactory. Even the selected acetate colors will stain wool to some degree, and this stain in turn will deteriorate the fastness properties of the wool component. The most urgent need is for a resisting agent that, when introduced into the bath, will prevent acetate colors from staining the wool as many of the already existing compounds successfully resist acid colors on nylon, and to a lesser degree on wool.

Wool-Orlon Blends

An important blend, gaining in popularity, is the Orlon-wool blend. In dyeing unions on this blend, it is necessary to depart from the cuprous-ion technique and the use of acid colors for the Orlon because wool will invariably absorb more of the acid colors, even when large amounts of reduced copper are used.

Basic colors have a direct affinity for Orlon and can be applied without the use of assistants. Basic colors, when applied to Orlon in the presence of wool, will stain the wool rather heavily, in some cases yielding a shade on wool equal to or deeper than the shade on Orlon. When basic colors are applied with acetic acid and a nonionic dispersing agent, such as Ekaline F, the staining of wool is slight and can be soaped off after dyeing. Selected basic colors, when dyed on Orlon, will satisfy many of the fastness requirements.

The method of dyeing this blend will depend upon the type of dyestuff chosen for the wool component. If the dyes used are of a neutral-dyeing type, it is necessary to use a two-bath method, since a large quantity of acetic acid must be added along with basic colors. If, however, level acid or chrome colors are decided upon for the

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Textile Highlights

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THERE is great interest in a new finishing treatment that improves the wearing qualities of cotton goods and gives other properties that make them more saleable to consumers.

The new finish, Hycar latices (water emulsions of a butadiene-acrylonitrile copolymer) not only lengthens the life of denim, sheeting and other constructions, but holds much of the improvement after washing. This is an improvement over conventional sizes which are lost during washing.

Specifically, Hycar latices give from 2 to 5 times more wear than untreated denims. In all cotton constructions after treatment, there is a big improvement in abrasion resistance and a more permanent, full hand. Other improvements by the use of Hycar latices are crease and wrinkle resistance and reduced shrinkage. Hycar latices can be padded on by the use of conventional equipment.

In addition to these latices, B. F. Goodrich Chemical Company manufactures a series of other chemicals for the textile industry. They cover a wide range of uses in providing better-quality finished textiles. A full discussion of these will be contained in a new textile bulletin to be available shortly. Write Dept. TK-3, B. F. Goodrich Chemical Company, Rose Building, Cleveland 15, Ohio. Cable address: Goodchemco. In Canada: Kitchener, Ontario.

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wool component, a one-bath method can be used.

Caution: Some of the basic colors, when mixed with the oppositely charged acid colors, might precipitate in the dyebath. In such cases a two-bath method is necessary.

The two-bath procedure, therefore, depends upon treating the blend with 10% of acetic or hydroxyacetic acid and 5% of Ekaline F. These chemicals are added to a cold dyebath and followed by selected basic colors. The temperature is slowly raised to the boil, and boiling is continued 1½ hrs. When a satisfactory shade is obtained on Orlon, the material is rinsed and soaped off and the wool is cross-dyed by conventional methods. Some bleeding of color from the Orlon will occur in the second bath, and for this reason the temperature should be kept as low as practicable.

The method described here is not universally accepted and cannot be used without difficulty. Most wool-Orlon blends are dyed separately in raw-stock or top form, the Orlon being dyed under pressure, and the components are blended together in subsequent operations. The basic-color method is given, however, as an indication of a promising possibility, mainly applicable to piece dyeing.

Wool-Nylon Blends

A common blend is that of nylon and wool. More experience has been had with this blend than with any other mentioned in this paper. While nylon in light shades will absorb a larger share of acid color than wool, the solidity improves as the depth increases. At medium depth, usually both nylon and wool dye to the same degree. In concentrated dyebaths, nylon will reach its saturation point and dye no longer, while wool will still absorb its share of dyestuff and therefore will dye darker.

The latter tendency is not so important because in deep shades the difference between the nylon and wool is not easily perceptible and the solid surface is apparent. In light shades, however, the slightest difference in depth is visible. In such cases, it is necessary to choose the dyestuffs skillfully and to introduce into the bath resisting agents for nylon.

Wool-Acrilan Blends

The production of solid shades on Acrilan-wool blends was difficult when the Acrilan component was of 1952-production type. The improved type of CN 33 has greater affinity for dyestuffs and is much more useful for blending with wool.

It is now possible to produce solid

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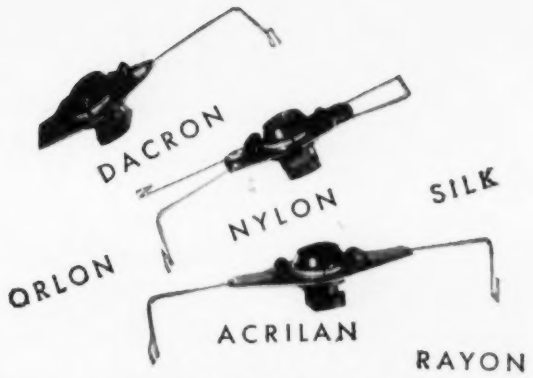

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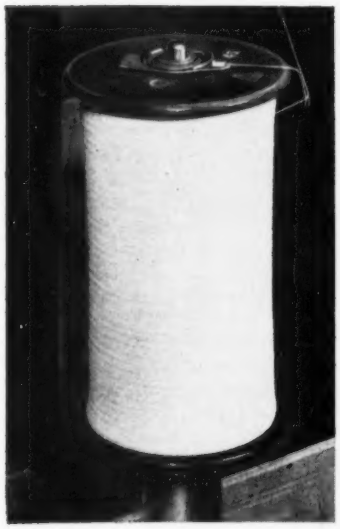

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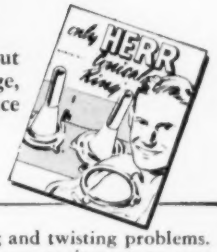

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shades by a one-bath method with selected level-dyeing acid colors and sulfuric acid at the boil. The premetallized colors and the neutral-dyeing acid colors are, in most cases, unsuitable for this purpose.

It is usually advantageous to pretreat this blend in 2% sulfuric acid at 200° F. for 15 mins. and to rinse well. After this pretreatment, the dyebath is made up cold with selected colors and part of the required sulfuric acid, the temperature is raised to the boil, and boiling is continued for 1½ hrs. while the remainder of the acid is added gradually.

Acetate Blends

The blends of acetate with newer synthetic fibers have not yet reached the degree of importance of the other blends. However, an interesting dyeing principle is directly connected with dyeing acetate blends with newer synthetics.

From our experience with Dynel, we know that the cuprous-ion technique could not be applied successfully by a standard method when a mixture of acid and acetate colors is employed. When copper is introduced into the dyebath after the acetate color has exhausted, however, good results are obtained.

The method of a retarded-and-controlled addition of reduced copper sulfate is referred to as the drip method and can be applied to both Dynel and Orlon. With such blends, both acetate colors and acid colors are added to the dyebath and the former exhausted on the acetate component. When exhaustion is accomplished, a mixture of cupric sulfate and hydroxylammonium sulfate is prepared outside the bath by first dissolving each compound in warm water, cooling down by adding cold water to each solution, and, finally, adding the cold solution of hydroxylammonium sulfate to the cold solution of cupric sulfate. The dyebath is acidified with sulfuric acid to a pH of 5, and the resultant cuprous solution is added or dripped into the boiling bath over a 30-min. period.

Acetate colors must be exhausted on the acetate fiber before the reduced copper solution is added, since this addition causes a large drop in the pH value of the dyebath. The same principle can be applied for dyeing such blends as Dacron-Orlon or Dacron-Dynel, although in the latter case a limited number of solid shades can be obtained with acetate colors only.

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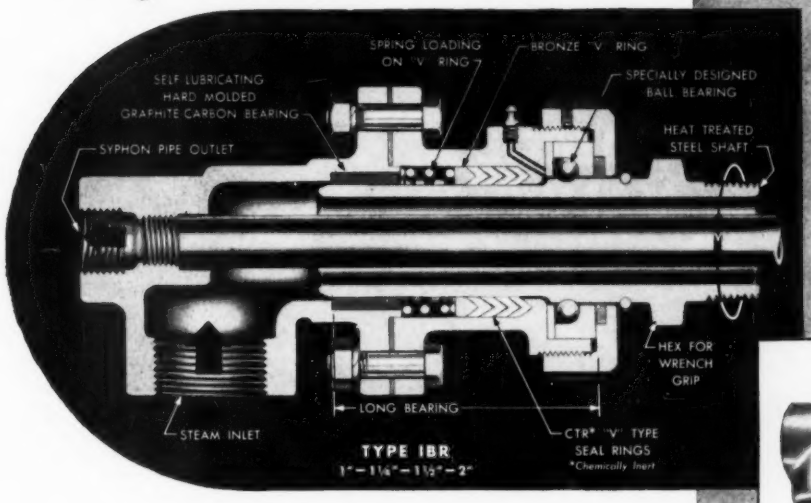

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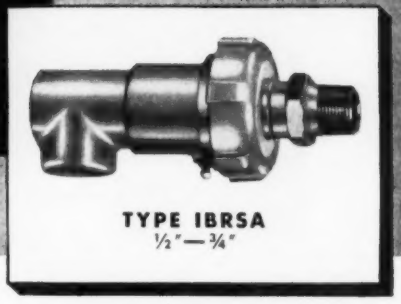

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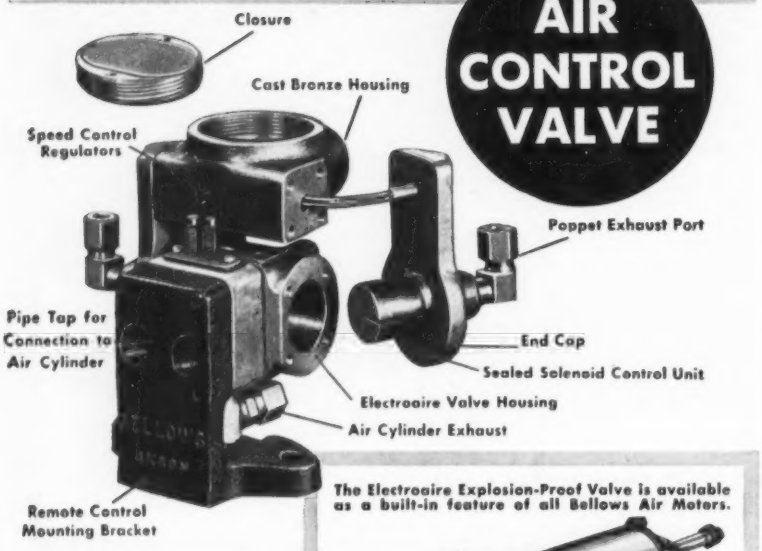

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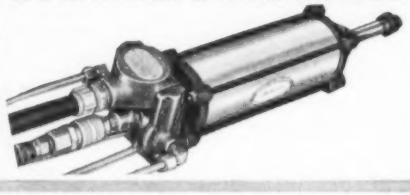

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The Bellows Co.

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Mill Maintenance

How To Maintain Insulation In Air Circuit Breakers

After high-voltage indoor-type air circuit breakers have been in service for three to five years, the insulation should be inspected and cleaned. The varnish should also be renewed if the surface is in bad condition.

Organic insulating materials are used extensively in this type of breaker to replace porcelain pole-unit supports, operating rods, barriers, braces, arc chutes, and parts used for similar purposes.

To insure constant electrical resistance, the surface of the organic material (in Westinghouse breakers, Micarta is used) is protected with a high-grade insulating varnish. The varnish may be either clear or pigmented, depending on the place where it is used and the apparatus design requirements.

The purpose of the varnish is to retard moisture absorption and to provide an easily cleaned surface. To maintain the insulating resistance at the highest possible value, the insulators should receive periodic maintenance.

The objects of maintenance are twofold:

1. To remove dust and other foreign airborne materials and chemical oxides that result from ageing of the varnish

2. To make sure that the varnish provides a continuous protective film over the entire insulating surface

How To Keep Insulation Clean

When the surface of insulation is dry, dust and varnish oxides do not usually cause any large change in insulation value. However, if moisture in the form of condensation or by more direct means is added to dirty insulation, the surface electrical leakage may be greatly increased even to the point of an electrical breakdown.

The first object of maintenance is cleaning. A clean, varnished surface will be smooth, glossy, and free from foreign material. To obtain a clean surface, it is necessary to scrub and wash the insulation.

To thoroughly clean insulation:

1. Wash the surface with heptane, which can be bought from any of the

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Meleine RS—A water-soluble type, highly resistant to dry cleaning. Recommended for jig-dyed fabrics. It is applied in the finishing operation and does not require temperature control. It is excellent for washable fabrics in combination with Dileine Conc., as well as resin-treated fabrics.

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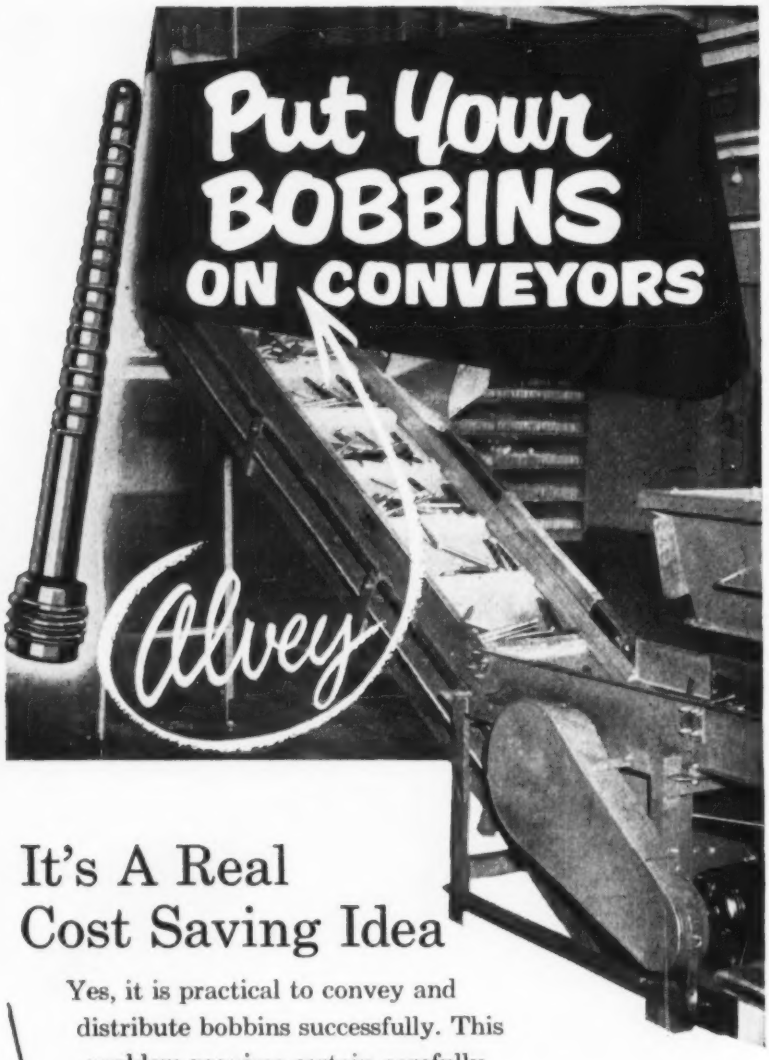

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major oil companies. Use clean paper towels in the heptane and use a clean towel on each part. Caution—Heptane is flammable. Do not allow open sparks or flames near the work.

2. After the heptane has evaporated—it evaporates within a minute or two—wash the surface with distilled water. Use fresh paper towels and keep the distilled water in a handy-size glass bottle. Wet the towel from the bottle, wash the part, and dry it with a fresh towel. Use fresh towels for each part.

How To Varnish Insulation

In inspecting the insulating parts before cleaning, wipe off the surface dirt with a dry cloth and examine the condition of the varnish and the insulation itself. If the varnish is fairly smooth and covers the parts liberally, proceed with the cleaning.

If the varnish appears thin and does not cover the insulation uniformly or if it is cracked or can be peeled off with the fingernail, the parts should be revarnished.

Parts do not have to be removed from the breaker to revarnish them. To revarnish insulation:

1. Sandpaper the surface and wipe off all dust.

2. Apply three coats of insulation varnish (a varnish for resin-bonded laminated insulating materials). Allow a 24-hr. drying time between coats at ordinary temperatures.

Drying time may be decreased by preheating parts with infrared lamps to a temperature of 40 to 50° C. before the first coat of varnish is applied. Dry each coat of varnish 4 to 8 hrs., or until the varnish is hard enough not to be lifted when the next coat is added.

When To Replace Insulation Parts

Resin-bonded laminated insulating materials are formed under pressure at high temperatures. The release of pressure, reduction of temperatures, and shrinking of the resin bond produce internal stresses.

The relieving of these stresses often results in the formation of minute cracks or checks along the laminated edges of the insulation. Such cracks, if small, are sealed by the varnish and are not harmful.

Some of the V-type breakers, particularly those built before 1939, have wood Micarta supports. Others have paper Micarta supports. The same varnish treatment is satisfactory for both.

In the inspection of parts before cleaning or varnishing, cracks may be found running lengthwise or (parallel to the laminations of the material). These cracks are more prominent on

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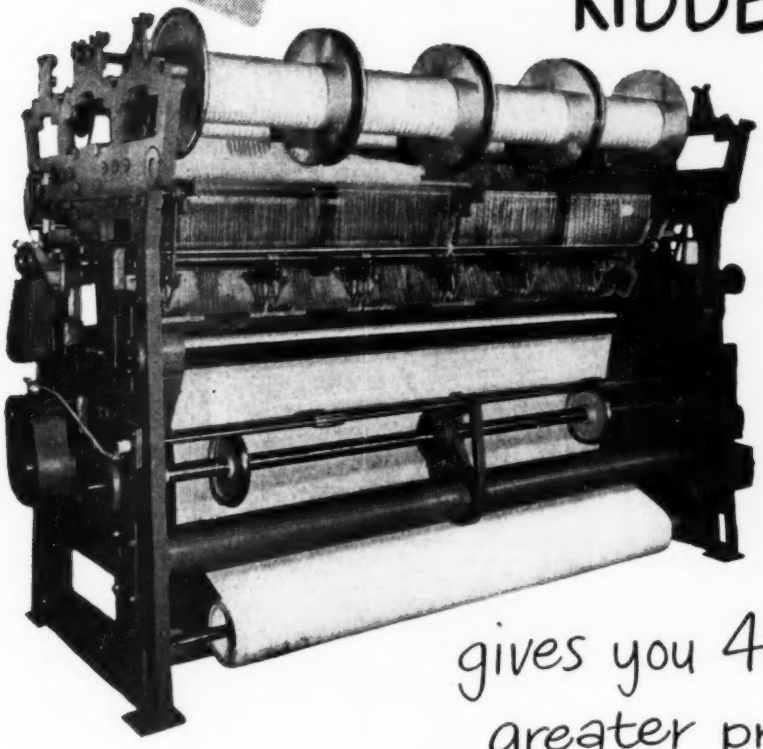
here's the NEW Model "E" KIDDE KNITTER



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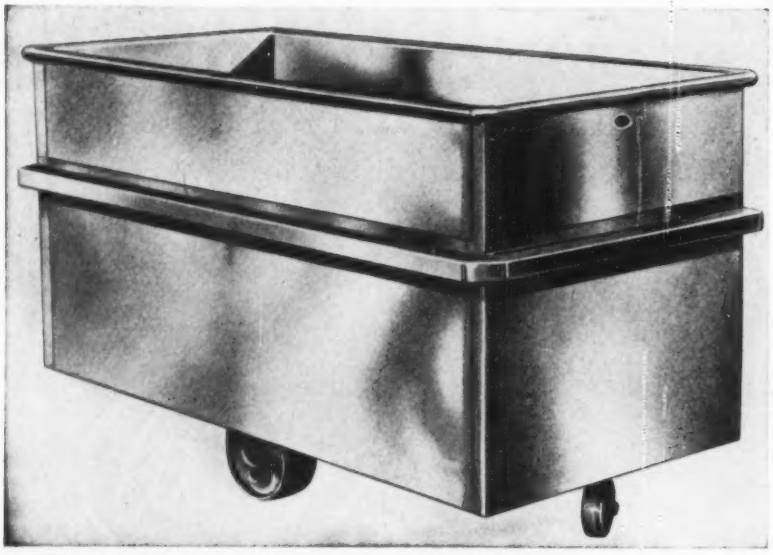

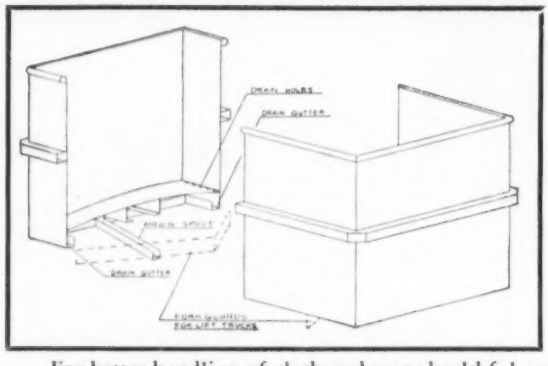

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the wood Micarta than on the paper material.

If these cracks are small and do not extend into the material much deeper than the surface, they do not represent a hazardous condition, but the parts should be revarnished.

When cracks are relatively wide and extend deep into the material, the parts should be replaced with new factory-finished parts. When in doubt as to whether parts should be replaced, first revarnish them. If the cracks are practically filled, the parts may be left in service. *Westinghouse Electric Corp.*

The use of electric motors and generating equipment is increasing rapidly. The number of motors and generators has about doubled since the war, and it is expected that a 30% increase will develop in the next 10 years. A 50% increase is expected by 1970.

There is now about 7.5 hp. of motors in place for each production worker in the U.S. By 1970, the horsepower per production worker should increase to 11.25.

If it's correct to assume that most industries will be air conditioned by 1970, the horsepower per production worker may reach 15. Air conditioning alone will add 40 to 50% to the present horsepower per worker.

More jobs will be done by machinery, at higher speeds, and with less manpower per machine horsepower.

For an example in textiles, look at the new large-package spinning frames. On one of them the motor size has been increased from 7½ hp. to 20 hp.

The Trend is to 277 Volts In Fluorescent Lighting

Fluorescent lighting, now using 110-volt current, is showing a trend toward the use of 277-volt current. The additional power actually causes an overall decrease in power consumption, and indications are that there is a considerable increase in tube life.

Any mill that uses 480 v. on three-phase 60-cycle power circuits can obtain a single-phase potential of 277-v. for fluorescent lighting by connecting the transformers wye and by pulling the neutral line along.

The lighting load on all three phases of transformers is balanced when this wiring system is used.

Small plants using 208-v. connected three-phase wye can obtain the same desirable load balance by using the same wiring system. The single-phase voltage of such a plant will be 208 divided by 1.73 (the square root of three), which results in 120 v., and standard lighting fixtures can be used.

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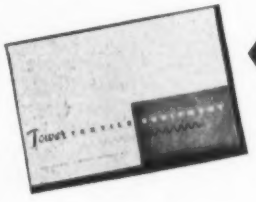

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Books of Interest

Export-Import Trade Barriers Studied

WORLD TRADE AND THE UNITED STATES by Claudius T. Murchison; American Cotton Manufacturers Institute, 1625 Eye St., N. W., Washington, D. C.; paper, 27 pages, no charge.

International commerce today is the "prisoner of bureaucratic control," Dr. Murchison maintains. To increase trade among countries, each nation should seek the restoration of rational price and currency relationships, the interchangeability of currencies, internal development and stability by means of private investment, the protection of foreign capital, and the expansion of individual private enterprise.

This is a thoughtful contribution to a subject that has ramifications extending into the lives of everyone everywhere.

Inside Story of the QMC at War

THE QUARTERMASTER CORPS: Organization, Supply, and Services, Vol. I, by Erna Risch; Superintendent of Documents, Goverment Printing Office, Washington 25, D. C.; cloth, 418 pages, $3.25.

Based on naturally voluminous QMC records, this book covers activities of the Corps in the United States during the period of rapid expansion caused by World War II. The administrative readjustments that were necessary are described, as well as the story of supply programs scrapped or modified in the face of unexpected demands, and the story of improvisation and production under pressure when plans were inadequate or even lacking.

Chapter III on the development of Army clothing is of special interest to textile men.

Waste-Treatment Data For Chemists, Engineers

INDUSTRIAL WASTES, Their Disposal and Treatment, edited by William Rudolfs; Reinhold Publishing Corp., 330 W. 42nd St., New York 36, N. Y.; cloth, 497 pages, $9.50.

Written by a group of men long in the field of industrial waste-material treatment, this monograph not only covers textile dyeing and finishing waste handling but also ranges through such industries as meat packing, leather, pulp and paper, coal, etc. Principle stress is placed on treatment, although attention is also given to the vol-

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umes and characteristics of wastes and the recovery of by-products.

Stuart E. Coburn of Metcalf & Eddy of Boston wrote the textile-waste section.

What Is It?
Who Makes It?

HANDBOOK OF MATERIAL TRADE NAMES, 1953 Edition, by O. T. Zimmerman and Irvin Lavine; Industrial Research Service, Masonic Building, Dover, N. H.; cloth, 794 pages, $20.

If you have ever wanted to know the composition of or the manufacturer of a product you knew only by its tradename, or if you have ever been interested in several sources of supply of a certain compound, then you should have this alphabetical compilation handy in your organization. Next time you will have no problem at all.

Over 15,000 tradenamed materials are given in the alphabetical listing in the first section of the book, the materials are cross-indexed according to their use classification in the second section, and the third section lists the tradename materials of over 1,500 companies under company headings.

New features of this edition are the 7¼ x10¼-in. pages, two columns per page, 300 additional pages, three times as many materials listed, and the entire use-classification section.

Newer-Fabric Properties Explained

TEXTILES AND TESTING COURSE OF STUDY, by the U. S. Testing Co., Inc., 1415 Park Ave., Hoboken, N. J.; spiralbound paper, 96 pages, $2.75.

As its annual summer-course basic textbook, this compilation of information on textile testing and related data by the U. S. Testing Co. can serve as a refresher for those already in this area of activity.

The book will be especially useful for beginners in the field and for those along the fringe of the textile industry who need to have specific knowledge on the handling of man-made fabrics.

End Uses of Cotton Tabulated

COTTON COUNTS ITS CUSTOMERS, 1953 Edition; by National Cotton Council of America, Box 18, Memphis 1, Tenn.; paper, 35 pages, no charge.

The amount of cotton (given in bales in the over-all listing) consumed in the United States during 1951 and 1952 is given in this annual report from the Cotton Council. The 107 leading uses are presented in the statistical array—51 of them apparel, 21 of them household, and 35 of them industrial.

A more detailed appendix, compiled from the U. S. Dept. of Commerce *Facts for Industry* series, lists statistics on specific-item production and gives weight per unit, noncotton content, processing loss, and quantity of cotton used in the same 107 groupings.

Towmotor dumps pot of annealed castings into shakeout hopper at Cleveland plant of Eberhard Manufacturing Co.

TOWMOTORS IN ACTION IN U. S. INDUSTRY

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Here's to TOWMOTOR, the fast and economical way of handling materials! Easy, too, because TOWMOTOR Power Steering reduces steering effort 80%! And speaking of power, the new "Cushioned Power" Diesels are as gentle and economical as ponies—with all the terrific strength of wild horses! There are dozens of other features that make special jobs like the one above, mere routine, and make *your* job twice as important to the boss. Send today for free booklet, "What Makes It Tick?" TOWMOTOR CORPORATION, Div. 2208, 1226 East 152nd Street, Cleveland 10, Ohio.

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ORIGINAL SUPPLIERS TO THE U.S.A.
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PLATTS' METALLIC CLOTHING PUTS THE FIBRES INTO THE WEB
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Booklets and Manuals

GLOSSARY OF TERMS Used in Methods, Time Study, and Wage Incentives; Society for Advancement of Management, 411 Fifth Ave., New York 16, N. Y.; paper, 32 pages, $1.

Ninety-three management leaders spent four years compiling the 332 terms and definitions described alphabetically in this booklet, which can be of interpretive use in negotiations between management and labor. Proprietary terms, terms with local flavor, terms of restricted use, and conventional well-known negotiating terms are omitted for the sake of brevity.

VOLUMETRIC ANALYSIS WITH THE FISHER TITRIMETER; Fisher Scientific Co., 717 Forbes St., Pittsburgh 19, Pa.; leatheroid, loose-leaf, 40 pages, $2.

This 40-page manual provides background information, detailed instructions, and methods of use for the titrimeter in determining the end-point of titrations. Fifteen detailed methods are given among the 11 chapters. Use of the Karl Fischer reagent is included.

TRADE—AND AID, Pamphlet No. 195; by Beatrice Pitney Lamb; Public Affairs Pamphlets, 22 E. 38th St., New York 16, N. Y.; paper, 28 pages, 25¢.

Trade cannot completely replace aid—at least not until other countries have been accustomed to lower tariff barriers everywhere and have had time to increase their production accordingly, this booklet says. Many adjustments must be made in all countries to encourage imports so that emergency programs can be put on a sound financial basis. This is an issue on which the author sheds needed light.

Useful Accessories For Textile Mills

► To request further information on any item, please use the card in the Reader-Service dept.; refer to the number at the end of the item concerned.

Pressure-Sensitive Paper Tape

A new pressure-sensitive paper tape that sticks at a touch for sealing cartons of all types has been announced by Minnesota Mining & Mfg. Co., 900 Fauquier St., St. Paul 6, Minn. It is designed for commercial carton-sealing applications that must hold under all weather and handling conditions. Trade-named "Scotch Brand Car-

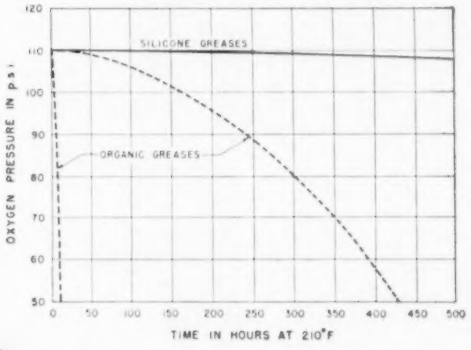
specify

DOW CORNING SILICONE GREASE 44

to reduce maintenance and increase the life of ball bearings operating at high temperatures

here's why . . . . . **1** Dow Corning Silicone Greases have extraordinary resistance to oxidation as indicated by the data given in Figure 1. After 500 hours of exposure to oxygen under a pressure of 110 psi at 210°F in contact with brass as a catalyst, a pressure loss of only 1.5 pounds was registered in the Norma-Hoffman bomb testing of these silicone greases.

OXIDATION RESISTANCE OF SILICONE AND ORGANIC GREASES IN THE PRESENCE OF BRASS AS INDICATED BY OXYGEN-BOMB TEST RESULTS



2 Dow Corning Silicone Greases show relatively little bleed or evaporation at temperatures in the range of 300-400°F as shown by the data given in Table I.

3 Dow Corning Silicone Grease 44 is serviceable at temperatures from —40 to 400°F in ball bearings having a maximum speed factor (bore in mm times rpm) of 150,000 to 225,000. The worked penetrometer (ASTM D217-48) for Dow Corning Silicone Grease 44 is: light consistency 300-320; medium, 250-270. Melting points are above 410°F; minimum flash point is 600°F. Ask for data sheet **AJ-8.**

TABLE I

RELATIVE BLEED AND EVAPORATION OF VARIOUS GREASES

Temperature in °F	Test[1]	Dow Corning Silicone Grease 44, Light Consistency	High Temperature Petroleum Greases A	B
300	Bleed, %	1.3	2.9	0.2
	Evaporation, %	0.6	2.9	13.4
	Total loss, %	1.9	5.8	13.6
390	Bleed, %	1.0	7.8	Nil
	Evaporation, %	3.5	15.4	39.8
	Total loss, %	4.5	23.2	39.8

[1] Values determined with equipment specified in AN-G-5a, except that test samples were held at test temperatures for 24 hours.

In the bearings of dryers, Dow Corning Silicone Grease 44 is used to reduce the relubrication schedule from once every 8 hours to once every 3 months. Operating temperatures are in the range of 350°F. Dow Corning Silicone Grease 44 Medium is now specified for all dryers in a large textile plant after 2 years of testing in National and Proctor & Schwartz machines.

In the bearings of Sanforizers. Experience in a large textile finishing plant indicates that Dow Corning Silicone Grease 44 can be used to reduce the relubrication schedule on main cylinder bearings from once every 8-hour shift to once every 30 to 45 shifts.

In the bearings of slashers. Two years of experience in textile mills indicates that Dow Corning Silicone Grease 44 Light has a service life of about 3 months at temperatures up to 350°F in closed-type Uxbridge Slashers.

In motor bearings, Dow Corning Silicone Grease 44 has many times the life of high temperature petroleum greases at temperatures in the range of 300° to 350°F. In permanently sealed or "cartridge" type bearings Dow Corning Silicone Grease 44 Light has a life expectancy of at least 5 years. That has been confirmed in thousands of motor bearings installed during the past 5 years by one of the major motor manufacturers.

In the bearings of oven conveyor systems, Dow Corning Silicone Grease 41 gives very satisfactory service even under conditions so severe that continuous, automatic oiling with the best high temperature organic lubricants could not keep bearings operable.

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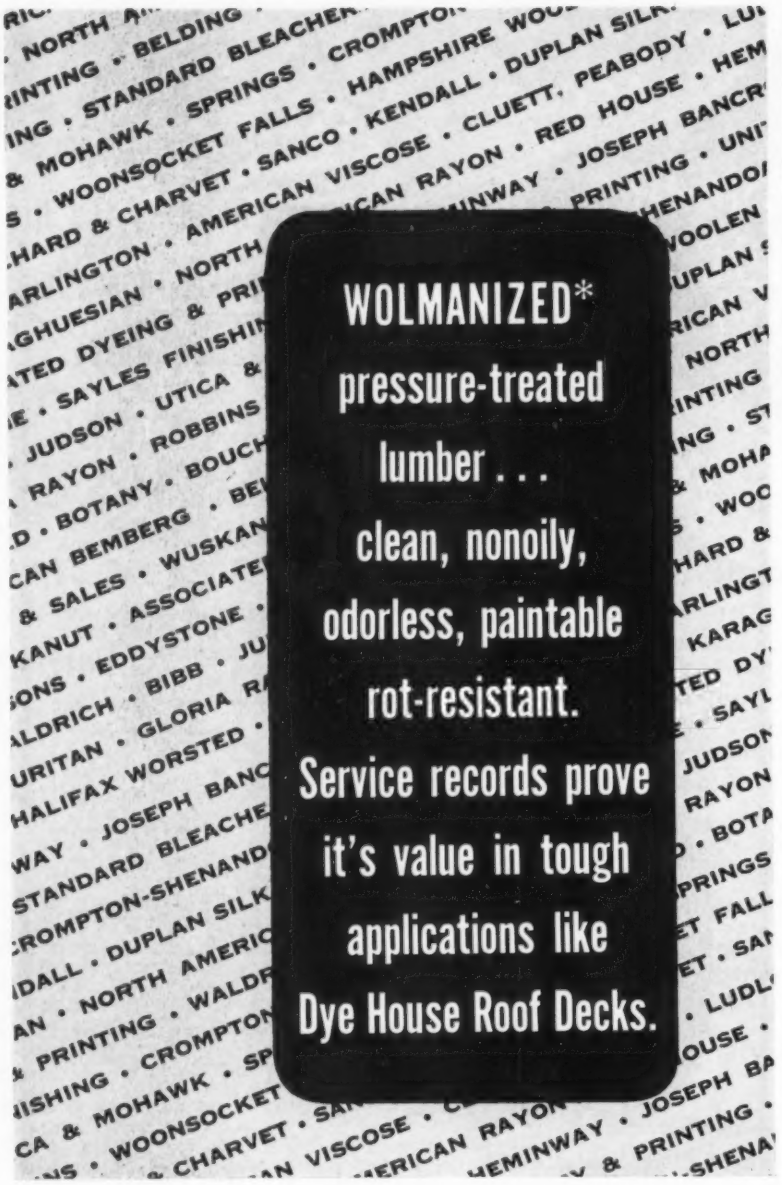

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Lumber

ton Sealing Tape No. 260," the new tape is made with a special 60-lb. paper backing that has been treated to make it strong and waterproof. (U-1)

Redesigned Valve Line

A redesigned line of 600-lb. small-steel globe, angle- and check-list valves has been announced by Lunkenheimer Co., Beekman & Waverly Sts., Cincinnati, Ohio. Two new features, a full-way plug-type disk with increased seating width and a new chromium stainless-steel seat that eliminates conventional seat rings, have been incorporated into these valves. The plug-type disk enables the company to discontinue the throttling-type seat and disk valve. (U-2)

Redesigned Water Cooler

A redesigned line of water coolers, described as "the first really new look in drinking water coolers in 10 years," has been announced by the Air Conditioning Div., General Electric Co., Bloomfield, N. J. Streamlined in appearance, the new coolers feature a front apron of stainless steel at the top and a louvered front panel that tapers in from top to bottom, where a full-width pedal enables control of the drinking water from any point in front of the cooler. (U-3)

Two New Paint Strippers

Two new paint strippers have been developed by Oakite Products, Inc., 142 Rector St., New York 6, N. Y., that are designed respectively for tank immersion stripping and brush-on stripping of a wide variety of paints and lacquers. Composition No. 56 is a thin-body solvent, neutral in character, with a pH of 7. It is nonflammable and contains no phenols, cresols, acids, or alkalis. The second material, Composition No. 57, is a viscous solvent, intended to replace combinations of nonviscous solvent detergents and thickeners when finishes are being stripped from vertical and inverted surfaces of equipment. (U-4)

30-Ton-Capacity Trailer

A new 60,000-lb.-capacity cargo-handling trailer has been put into commercial production by Mercury Mfg. Co., S. Halsted St., Chicago 9, Ill. The all-steel trailer, Model A-443, can handle extra-heavy material and equipment in cargo warehouse and shipping dock. Its flat-top construction makes it easy to load and unload with any materials-handling system. The trailer is 17 ft. long and 7 ft. wide and weighs 5,700 lbs. Roller-bearing wheels with solid pressed-on rubber are standard. (U-5)

Three Office Copies Per Minute

A new office machine for the rapid production of multiple copies on letter-size paper has been announced by Eastman Kodak Co., 343 State St., Rochester 4, N. Y. Known as the Verifax Printer, the unit makes three or even more copies, costing less than 5¢ each, from a single matrix machine. The copies are the same size, black-on-white duplicates of the original material, and are immediately ready for

use. One photo-exact copy can be obtained in about 50 secs. and three copies in 60 secs. The only service connection needed is a 110-v. outlet. (U-6)

Tiny-Parts Cabinet

The production of an all-steel Little Gem tiny-parts cabinet for use in industrial plants where small-parts storage space is needed has been announced by Precision Equipment Co., 3714 Milwaukee Ave., Chicago 41, Ill. The unit consists of two 1¾-in.-high drawers in a one-piece welded frame, with an over-all size of 3¼x11x11 ins. Each drawer is furnished with eight dividers; so a cabinet has a total of 24 adjustable compartments. Any number of units can be stacked in one assembly. They come in a baked green finish and weigh 10 lbs. (U-7)

Truck Roll-Handling Attachment

A roll-handling attachment is a "Walkie"-type electric truck in the Powr-Worker line, announced by Clark Equipment Co., Circle Drive, Battle Creek 78, Mich. The attachment picks up rolls from either vertical or horizontal positions, in and out of storage, to a height of 130 ins. Hydraulic clamps handle rolls in diameters from 24 to 42 ins. and in weight up to 2,000 lbs. (U-8)

Two New Lift Trucks

Two completely new lift trucks with capacities of 3,000 to 4,000 lbs. have been released by Hyster Co., 2902 N. E. Clackamas St., Portland 8, Ore. They are models YC-40 and UC-30, powered by heavy-duty watercooled industrial engines and mounted on cushion-type tires. Outstanding features are said to be their extreme compactness, durability, and maneuverability. Both have 24-in. load centers. The YC-40 is 38 ins. wide and 78½ ins. long. The UC-30 is basically the same truck as the YC-40, but with 600 lbs. less counterweight. (U-9)

Self-Locking Spring-Pin Fastener

The Sel-Lok spring pin, a self-locking, spring-pin fastener that replaces taper, grooves and dowel pins in all kinds of assemblies, is being manufactured by Standard Pressed Steel Co., Jenkintown, Pa. It is vibrationproof, shockproof, and easy to insert and remove; so expensive reaming operations are eliminated. Diameters from 1/8 to ½ in. and a wide variety of lengths are available. (U-10)

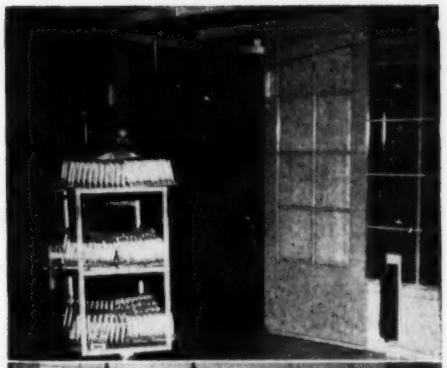
Improved Load Lift

An improved lift truck has been brought out by Market Forge Co., 27 Garvey St., Everett 49, Mass. The same interchangeable mechanical and hydraulic features are applied in this load lift as in previous models. The hydraulic system is nonleaking even when the truck is on its side. The front-axle support assembly and fifth wheel are made of certified malleable iron instead of welded steel. Incorporated with it is the pivot for the handle hold-up bracket. This design eliminates the swivel collar and setscrew. (U-11)

Improved Vinyl-Coating System

A new vinyl-coating system that is de-

NEW



Bloomsburg Weaving Mills' Fernbrook Park Plant — note how Magic Doors accommodate modern overhead conveyor system.

OR EXISTING

Company's Bloomsburg plant — Magic Doors speed two way traffic.

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UP OPERATING EFFICIENCY
CUT OPERATING COSTS

Back in 1947, Bloomsburg Mills installed the first set of Magic Door Controls in the older mill at Bloomsburg, Penna.

Since then Bloomsburg Mills have added four more sets of Magic Door Controls at this mill — AND they have installed nine sets of Magic Door Controls as original equipment in their up-to-the-minute new Fernbrook Park Mill.

WHY SO MANY RE-ORDERS?

because Magic Doors increase operating efficiency, reduce operating costs. No one has to stop productive work to tug and pull at heavy plant doors.

because Magic Doors keep conditioned air, humidity and room temperature at constant levels.

because Magic Doors speed mill traffic. They open on approach, stay open until passage is clear, *then* close automatically.

because Magic Doors pay for themselves. Magic Doors are saving many textile users many thousands of dollars each month. Yet Magic Door Controls with pull cord, regular Stanley operator for "in" and "out" door handling two way traffic, that uses existing air supply on existing 60" doors, can be purchased for as little as $347.25 F.O.B. New Britain. Send for full information today.

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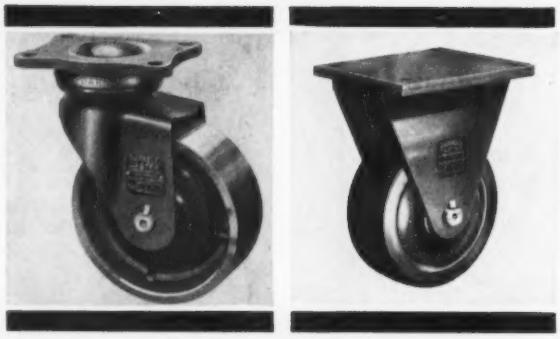

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Here is an all 'round industrial swivel caster, with matching stationary companion, that has proved highly popular in many hard usage applications. With treads adaptable to all types of floors, and all wearing parts carburized and hardened, these casters will give a long life of satisfactory service, swivelling and rolling easily under extra heavy loads. Thousands of other models described in—

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signed to overcome the common handicaps of poor adhesion, low build, and poor surface preparation has been developed by Prufcoat Laboratories, Inc., 50 E. 42nd St., New York, N. Y. The new system, combining Primer P-50 with a top coating of vinyl, results in a finish that utilizes the desirable properties of a heavy-duty drying oil primer and the well-known chemical-resistant advantages of vinyl coating. The primer bonds securely to most metals. (U-12)

Liquid-Container Filter

A new filter has been designed to meet the need for smaller, more simplified, less expensive filters suitable for handling 5- and 6½-gal. containers. Such a filter, the GS No. 49, completely porous at the spout and costing $92.50, has been developed and put on the market by General Scientific Equipment Co., 2700 W. Huntingdon St., Philadelphia 33, Pa. A chain is provided to hold the container in position when it is in use. A pouring spout made of acid-resistant rubber tubing is provided with openings from 1 to 1⅛ ins., with a flow capacity of slightly more than 1 gal. per min. (U-13)

Marking and Counting Instrument

An electrical instrument for marking and counting simultaneously has been developed by May Engineering Co., 6055 Lankershim Blvd., North Hollywood, Calif. The instrument consists of a counting box that fits on the desk, with a mechanical pencil attached to it by an electrical cord, through which impulses are sent to the counter every time the pencil is depressed. Every time a check mark, for example, is made, the counter on the desk clicks up one number. The complete device weighs approximately 2 lbs. Size of box is 6x3¼x3 ins. The instrument has been tradenamed Mark-N-Count. (U-14)

Mechanical Weight Recorder

A simplified, mechanical weight recorder, built in as an integral part of its scale's tape-drive dial head, is available from Howe Scale Co., Rutland, Vt. It has a minimum of working parts to assure the user of trouble-free operation and long life. A touch of the push bar causes the weight to be printed. The total lapsed time for pushing of the printing bar until the recorded weight is made is just one second. Printing can also be controlled by a trip switch on a conveyor line, on a monorail system, or by other methods. (U-15)

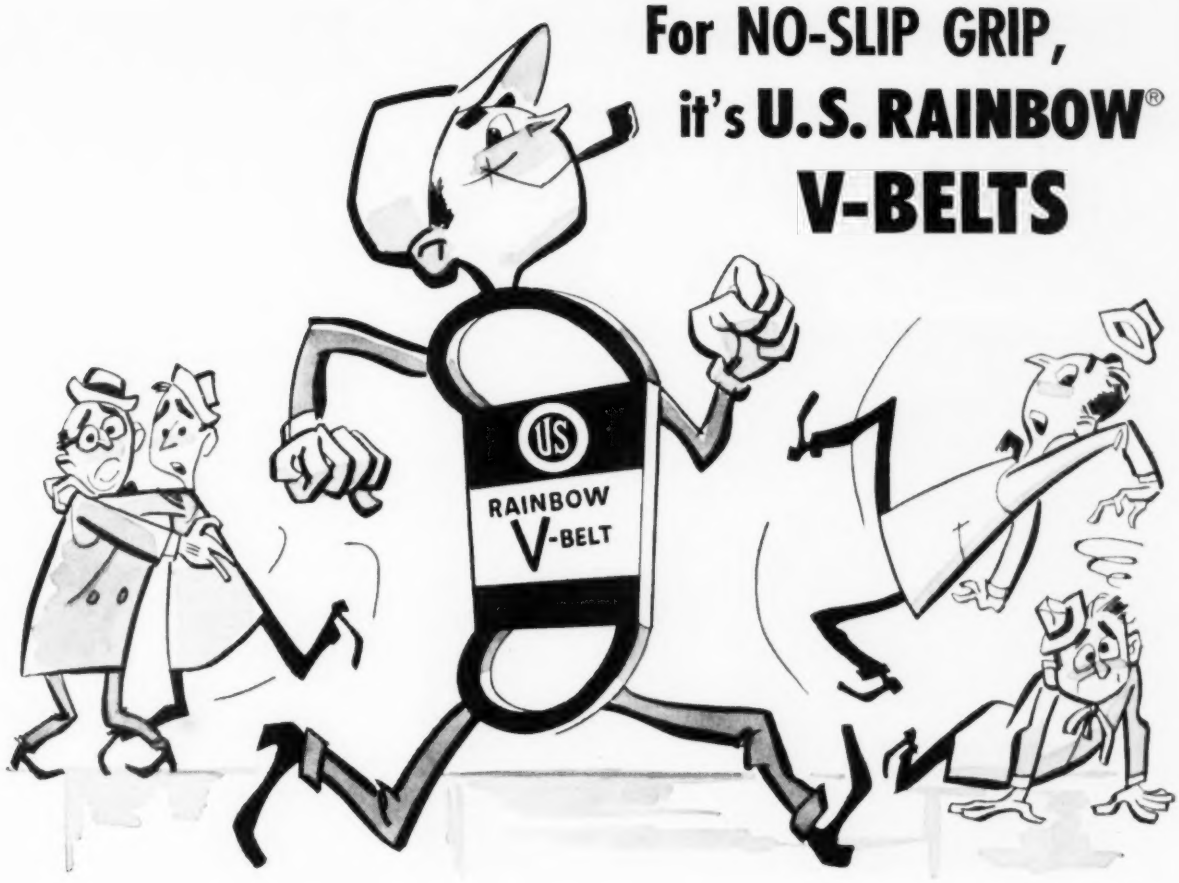
New-Model Lift Hoist

A new model Zip-Lift selective hoist with rope control to sell for only $199.50 has been put on the market by Harnischfeger Corp., 4440 W. National Ave., Milwaukee 46, Wis. The new hoist is actually a smaller model of a standard design already available from the company. There are two models: one with a lifting capacity of 500 lbs. and the other with a lifting capacity of 1,000 lbs. Hoisting rates are 25 and 50 ft. per min. Both models are available with 12- or 18-ft. lift. (U-16)

Oil-Base Paint

A new oil-base paint for waterproofing

For NO-SLIP GRIP, it's U.S. RAINBOW® V-BELTS



Why U. S. Rainbow V-Belts are superior: No. 1 in a series.

You can be sure there will be no slipping on the drive when you use a U. S. Rainbow V-Belt. Straight sidewalls grip the grooves the full height of the belt, providing the complete contact which results in much greater pulling power and eliminates slippage.

Every ounce of excess stretch has been worked out mechanically before leaving the factory, yet the belt still remains sufficiently elastic to withstand heavy shock loads.

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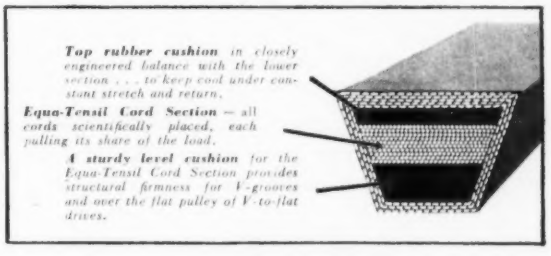
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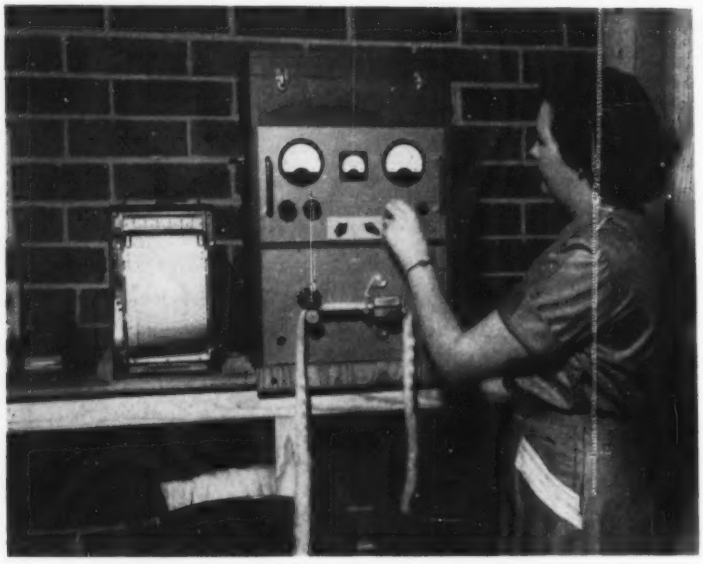
How Farnell Mills Division, Woonsocket Worsted Co., Uses

FIELDEN YARN EVENNESS RECORDER and INTEGRATOR



At the Farnell Mills Division, Laurens, S. C., one woman, using a Fielden Yarn Evenness Recorder and Integrator gives complete quality control of the yarns produced by this mill, and two neighboring mills.

To quote Edwin A. Farnell, Jr., President of Woonsocket Worsted Company,

"It has proved to be invaluable in our operation.

"After starting to use it, a repetitive fault was discovered in an operation not apparent to visual examination—and was corrected promptly. Now, production of each operation is checked on a regular daily or weekly schedule.

"It has a minimum of adjustments and computation and interpretation of results are not difficult for the average employee.

"It has the added advantage of being less costly than other testers.

"All the control work for three mills is accomplished on a systematical basis, in one laboratory, the heart of which is the Fielden Yarn Evenness Recorder and Integrator."

Write for full description as applied to your requirements.

Fielden INSTRUMENT DIVISION

ROBERTSHAW-FULTON CONTROLS CO.
2920 North 4th Street • Philadelphia, Pa.

surfaces is announced by Monroe Co., Inc., 10707 Quebec St., Cleveland 6, Ohio. Known as Damp-Seal, the paint resists moisture on interior and exterior surfaces with just one application. It contains a grit-like volcanic ash filler that fills up small pores and stops capillary action. It's waterproof without sealing, chipping, blistering or cracking. Available in seven colors, it requires no sizing and can be applied over unpainted or previously painted surfaces, wet or dry. (U-17)

How To Handle Roving

(*Continued from page 124*)

laid in the full row on the first layer and 9 bobbins will go in the staggered row; so each layer will hold 19 bobbins. The number of layers required is $132 \div 19 = 6.8$, or 7 layers.

Fig. 2 shows the bobbins as they lie in the truck. *B* is 4 ins., *C* is 2 ins.; *A* is the space between the rows:

$A = \sqrt{B^2 - C^2}$

$A = \sqrt{16 - 4}$

$A = 3.464$

The depth of the truck is six times *A* plus one diameter of the full bobbin.

Depth $= (6 \times 3.464) + 4$

Depth $= 24\frac{3}{4}$ ins.

To find the depth of any truck, you can use the formula:

$$\text{Depth} = \text{dia. of full bobbin} + (\text{Rows} - 1)\sqrt{\frac{3 \times \text{Dia.}^2}{4}}$$

For a 5-in. bobbin with eight rows:

$$\text{Depth of truck} = 5 + (7 \times \sqrt{\frac{3 \times 25}{4}})$$

$= 35\frac{1}{4}$ ins.

Another important point in building a roving truck is to build the body of the truck as high off the floor as stability requirements and ease of loading will allow. The effort required to creel the ring frames depends on how far the bobbins have to be lifted; trucks with movable bottoms controlled by springs (similar to sliver cans) have much to be recommended.

Roving per Frame per Shift

The roving man needs to know how many bobbins are needed on each frame per shift. This information prevents wasted time touring a department to find out where rovings are needed. A list showing the number of bobbins required for the various counts being spun is all that is required. The full calculation is necessary for only one count and roll speed; the number of bobbins is in inverse proportion to the counts and direct proportion to the roll speed (assum-

ing all frames have the same number of spindles).

For example, suppose *B* bobbins are required per shift for 32s yarn with a roll speed of 115 rpm. If you need to know the bobbins needed per shift for, say, 26s yarn at a 125-rpm. roll speed, you can figure it out from a simple proportion:

$$\frac{B \times 125 \times 32}{115 \times 26}$$

Surplus Roving

Surplus roving that is essential to cushion the day-to-day variations in production between the roving frames and the spinning frames should be kept in roving trucks to avoid extra handling. It should be covered up and kept away from the frames, and the supply should be kept as low as possible consistent to its purpose. The trucks should be rotated as frequently as possible to prevent possible color variations that would show up as striped beams or filling bars.

If the spinning frames run ahead of the roving supply, the roving man should get his supply from the surplus roving, and the card room should feed its production into the short stock.

Also, a short supply of roving can be kept on the creel as a safety factor. If the spinner needs roving before the roving man reloads the creel during a busier-than-usual creeling period, he does not have to waste time walking around the frame to the closest roving. This supply should be kept as low as possible. If the supply is too large, the roving will get dirty and the roving man will have difficulty in cleaning the creels.

Smooth Creel

Before the full bobbins can be laid on the creel, the empty bobbins must be removed and the creel top wiped or brushed. If it is not cleaned, the accumulated fly will cling to the new bobbins and cause gouts. To facilitate the cleaning operation and to help prevent fly from accumulating, the creel should have a smooth, hard surface. With old creels it is often profitable to sand down the creel top and varnish it.

Duties of the Roving Man

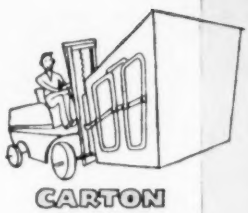
The actual list of roving-man duties varies with individual plants, but a typical list might look like this:

1. Transport full trucks from elevator to frames.
2. Remove empty bobbins from creel.
3. Clean creel top.

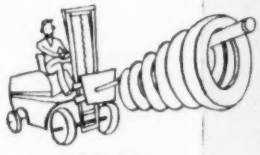
(*Continued on next page*)

Have You Explored All the Ways To Save Money With a Fork Truck?

WOULDN'T IT BE GOOD BUSINESS to know all the ways to save money with your Clark truck? It's the function of Clark attachments to transform your truck into a machine of *many* uses. Rather than let a truck stand idle for "lack of work," you can switch from one attachment to another in 10-20 minutes—go from one job to another, from partial idleness to *full-time* usefulness.


CARTON CLAMP

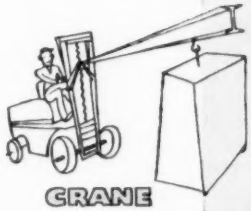
For example, why use manual labor to handle scrap, coal, sand or even cement? You'll do the job faster, more economically with one of Clark's shovel attachments. Why manhandle cartons, crates, rolls, drums, bales? Simply switch to the proper Clark attachment—there's one designed to handle practically any product or material. And for the relatively few cases where a standard attachment won't do the job, it's more than likely that our Custom Truck Department can design and build special equipment to solve the problem (—and inquiries are invited).


RAM

Perhaps you're hesitating to buy a fork truck because your principal handling job requires only part-time truck application. If that's the case, don't fail to look into this attachments angle. Chances are we've got, or can devise, one or more attachments that will enable you to utilize a fork truck profitably, all day long.

SHOVEL

Your local Clark dealer (listed in the Yellow Pages of your phone book) will be glad to help you plan ways to multiply the usefulness of your Clark trucks and POWRWORKER hand trucks. Or if you prefer to use the coupon, we'll gladly send a brochure describing the Clark line of attachments.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1903 1953 CLARK EQUIPMENT

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AND POWERED HAND TRUCKS · INDUSTRIAL TOWING TRACTORS

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☐ Have representative call

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Firm Name_____

Street_____

City_____ Zone_____ State_____

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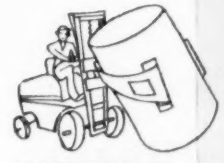
ROTATING ROLL CLAMP

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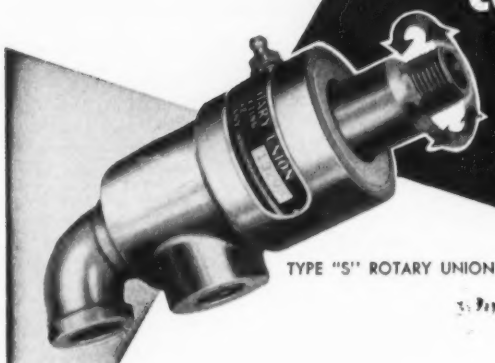
ROTARY UNION

(REG TRADE MARK)

a revolving steam connection

PIPE SIZES 1/4" THROUGH 3"



TYPE "S" ROTARY UNION

The Engineer's Friend*

The ROTARY UNION is the only revolving steam connection that you can install in 15 minutes and then forget about. We *guarantee* one year's perfect service without mechanical maintenance of any sort, and many ROTARY UNIONS have given three or more years of such service.

Every ROTARY UNION comes complete with flexible metal hose connections, ready for installation on your dry cans, slashers, calenders, embossers, printing, or coating machines. If you haven't tried them, order a set today for any one of your machines, and compare their service with any other steam connection. You'll agree that they are the engineer's friend.

Contact our nearest office for consultation or write Dept. 8W for our catalog.

*Production men like them too. They cut down-time due to sealing failures to just about zero.

"Where *Good Connections* Count"

PERFECTING SERVICE COMPANY

332 Atando Avenue (Home Office and Factory) Charlotte, N.C.

Atlanta, Chicago, Cleveland, Philadelphia, Providence, New York, Montreal, Toronto

4. Lay on full servings.
5. Mark trucks with type of waste left on bobbins.
6. Transport nearly empty bobbins to bobbin-cleaning machine.
7. Clean bottom and sides of empty trucks.
8. Transport empty trucks to elevator.

To perform these duties, the roving man needs:

1. A brush capable of cleaning the full width of the creel
2. A cleaning cloth to clean out empty trucks

Both the cloth and the brush should be made so they can be hung on the outside of the roving truck; they should never be carried on the person to tangle with the ends when the roving man reaches up to lay roving on the creel.

Roving Man at Work

Now, let's watch an efficient roving man at work. He leaves the elevator or surplus pile with his equipment at the beginning of the shift. He has two trucks, one empty and the other full. He pushes one and pulls the other.

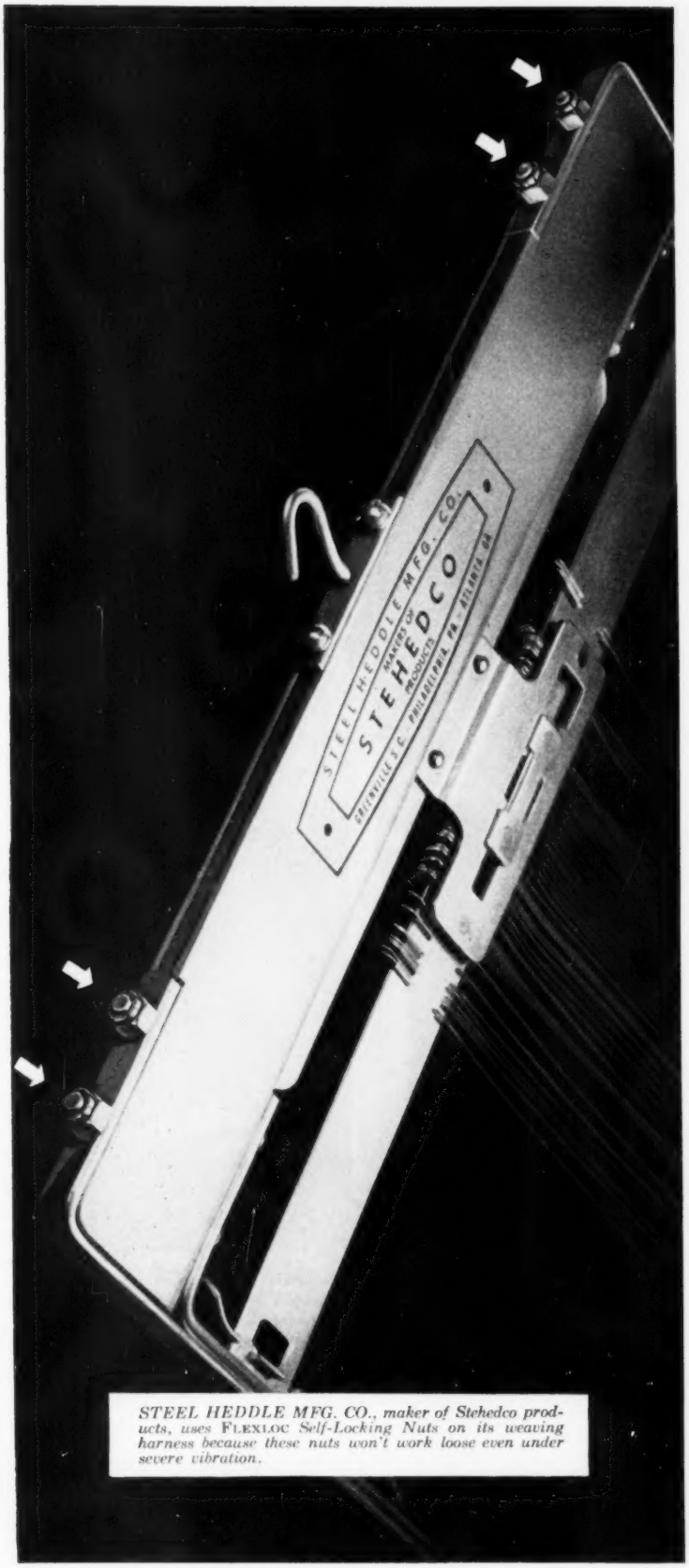
Going directly to the first frame, he leaves the full truck at the end of the frame and starts to empty the creel. He pushes the empty truck in front of him. Arriving at the far end, he goes back to the full truck, brushing the top of the creel. He then starts laying full roving on the creel, two or three in each hand depending on the size of the bobbins.

This procedure continues until the truck is empty. He then cleans out this truck and pushes it to the elevator. Returning with two full trucks of roving, he continues as before with the partly filled truck of empty bobbins and a full truck of new bobbins. When his empty bobbin truck is filled, he marks the type of waste on the side with chalk and takes the truck to the bobbin stripping machine.

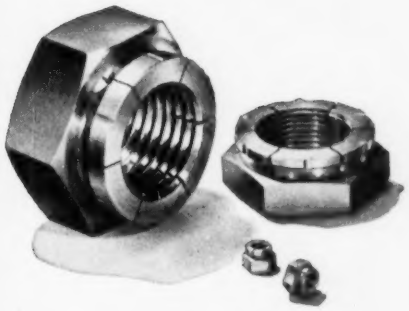
You don't need to watch long before you discover that he seldom does any useless walking and that he always pushes two trucks whenever he transports stock.

Four Safeguards for the Polio Season

1. Go to bed if you don't feel well.
2. Keep clean; wash hands before meals.
3. Stay at home and keep away from crowds.
4. Don't get chilled; don't bathe long in cold water or sit in wet clothes.



STEEL HEDDLE MFG. CO., maker of Stehedco products, uses FLEXLOC *Self-Locking Nuts on its weaving harness because these nuts won't work loose even under severe vibration.*



Why FLEXLOC locknuts save you time and money

FLEXLOC locknuts save you time and money in assembly, because they are one piece, all metal—nothing to assemble, come apart, lose or forget. They eliminate complicated, time-consuming methods of locking threaded fasteners. They offer simpler, faster application than plain nuts and lockwashers, castellated nuts and cotter pins, nuts and jam nuts.

FLEXLOC locknuts save you time and money in maintenance, because they stay put as soon as their locking threads are fully engaged. Once you install them, you can forget them. Yet they can be removed and reused repeatedly. Service and inspection periods can be stretched safely from days to weeks, even months.

FLEXLOCs are stocked by leading industrial distributors and deliveries are prompt. Write for literature and samples. STANDARD PRESSED STEEL Co., Jenkintown 35, Pa.

FLEXLOC®

LOCKNUT DIVISION

SPS

JENKINTOWN PENNSYLVANIA

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Textile Specialties
cut your processing costs

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Laurel Textile Oil—cotton, rayon
Lauramine #1—cotton, synthetics
Lauramine #20—softener for package-dyed cotton yarns and blends
Olamine (Cation Active)—cotton, synthetics
Yarn Conditioners—cotton and mixed yarns
Softeners and Anti-Static Compounds—Regent Coning Oil—Orlon, Dacron, Acrilan, Nylon, Acetate
Spinol RL—Orlon, Orlon-Wool blends, Dacron
Laurel Hosiery Finishes—all fibers
Permanent Resin Finishes—all fibers
Flame Retardant #527C
Water Repellent Compounds—all fibers
Weighters & Conditioners—all fibers
Dullers

Laurel Scours and Penetrants

Laurel Brand Soaps—all fibers
Laurel Hydrosol—wool, cotton, mixtures
Laureltex Transfer Removers—all fibers
Laureltex #340
Laurel Transfer Solvent #622C
Laurel Synthetic Detergents and Penetrants
Laurel Supergel RS—all fibers
Laurel Boil-off Compounds—rayon, nylon, mixtures
Laurel Triconate—rayon, nylon, mixtures
Laurel Oils—Wool, Rayon—Sulphonated, Scouring, Fulling, Finishing Oils for all purposes, Stainless Knitting Machine Oil

Laurel Products are available for all fibers and fabrics. Call on us for recommendations to meet your specific problems.

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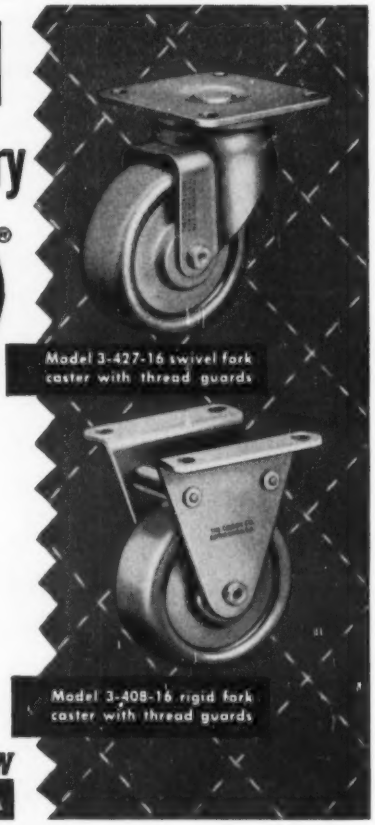
Designed
by the Textile Industry
built by Colson



Model 3-427-16 swivel fork caster with thread guards

Model 3-408-16 rigid fork caster with thread guards

Our friends in the Textile Industry worked with us in developing casters and materials-handling trucks to meet their needs—*exactly*. The result is a line of casters, hand trucks, platform trucks, box trucks, and drum and barrel trucks that can add extra efficiency to any mill operation. COLSON Casters roll easily over all floors, swivel freely, are rust resistant. Many models have thread guards. Write us or consult the yellow pages for the COLSON office near you.

Write for free catalog—
"COLSON Trucks and Casters"

THE COLSON CORPORATION
ELYRIA, OHIO
CASTERS · LIFT-JACK SYSTEMS · INDUSTRIAL TRUCKS

TEXTILE *Equipment* NEWS

(Continued from page 154)

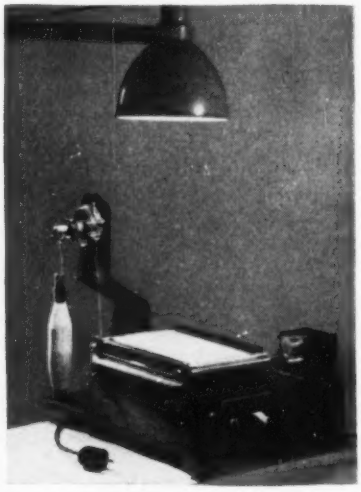
ber of fibers of each length category in the sample.

The machine is arranged to measure fibers up to 13 ins. in length in steps of ¼ in. Over-all dimensions are 19x9x8 ins. Weight of the tester is about 30 lbs.

FORCEPS HOLDING FIBER is slowly pushed to the right by the worm, drawing out the fiber from the left until the end is reached. Removing the forceps knocks the counter at that length up one notch.

Circle T-20 on Reader-Service Card

Unit Makes Shadowgraph Yarn-Appearance Windings



PERMANENT RECORDS of yarn appearance are possible with the shadowgraphs made on this winder that winds according to ASTM yarn-appearance test standards.

The Vitno winder, which has five pairs of interchangeable grooved rollers over which yarn is wound for visual-evaluation purposes, has been put on the world textile market by Handelsafdeling N. V., G. Dikkers & Co., Hengelo, The Netherlands. Each set of rollers automatically winds certain

yarn numbers with their ASTM-approved traverse.

Shadowgraphs of the yarn are made by photographic paper that is slipped in between the rolls, directly under the yarn windings. These graphs are permanent and can be filed away for reference purposes.

A new yarn to be tested is tied to the previous sample and gradually replaces the old sample across the grooved rolls. Only one of the rolls is driven; its speed is variable and depends on the strength of the yarn being wound on. Winding medium-count yarns usually takes about 2 mins.

Light from a 200-w. bulb placed 3 ft. 3 ins. away from the apparatus will in 4 secs. give on ordinary photographic paper the intensity of photographic impression required by ASTM standards.

Circle T-21 on Reader-Service Card

Switch-Type Rollers Offer Materials-Flow Flexibility

NEW TURNTABLES for use with its line of rollers and gravity wheel conveyors have been announced by Sage Equipment Co., 31 Essex St., Buffalo 13, N. Y. The turntables permit products being conveyed on straight sections of conveyors to be diverted at any angle or to pass straight across the turntables.

The roller or wheel conveyor sections are mounted on large, easy-to-rotate casters that turn these sections on a circular flat-steel plate. A built-in lock arrangement rigidly holds the rotating section of these turntables at the desired position.

Circle T-22 on Reader-Service Card

Inspecting, Winding, and Measuring Unit Has Variable Speeds

Designed to handle large 36-in.-wide rolls of cloth more efficiently, a new inspecting machine has been put on the market by Hermas Machine Co., Hawthorne, N. J.

The frame is of 5-in. channel steel,

MICRO limit switches make quill loading an automatic job at 96 Mill

Two MICRO heavy-duty limit switches automatically control the carriage travel of automatic hoists in the 96 Mill of the Matthews Mills at Greenwood, S. C.

The upper switch stops the motor when the carriage reaches the position for dumping the quills into the hopper which feeds the conveyor. The lower switch stops the motor when the carriage returns to the floor. Their use makes it unnecessary for the operator to remain at the hoist during the travel operation.

These switches were selected by the plant engineer of the 96 Mill for this operation because of their sturdy construction, their ability to withstand the high humidity and lint-laden mill atmosphere and because of the ready adjustability of the roller arm actuator to the exact position required.

Textile mill owners, operators and plant engineers are finding innumerable applications for MICRO switches to increase the productivity of their equipment by making it safer and more automatic. MICRO authorized distributors are located in key cities with complete stocks of MICRO for such plant applications. Consultation and advice on specific applications may be obtained from your nearest MICRO branch office.

MICRO
MAKERS OF PRECISION SWITCHES
FREEPORT, ILLINOIS

A DIVISION OF
MINNEAPOLIS-HONEYWELL REGULATOR COMPANY

For more information, write direct or use Reader Service post card.

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TIME DELAY RELAYS

solenoid actuated—pneumatically timed

Introduces time delays into a-c or d-c circuits. Easily adjusted to provide delays ranging from 0.1 second to five or more minutes.

The AGASTAT is small, light, and operates in any position. Dust-proof timing chamber assures long operating life with a minimum of maintenance.

Write for Bulletin
Dept. A1-816

AGA

Division of Elastic Stop Nut Corporation of America
1027 Newark Avenue, Elizabeth 3, New Jersey

Sterling Ring Travelers

HOT?

A foolish question maybe, but do your Travelers get TOO hot?

The cure for that, of course, depends on the cause. If you have this condition, talk it over with the Sterling man.

He is friendly and can be very helpful.

M. H. Cranford, Box 204, Chester, S. C.
D. R. Ivester, Box 392, Clarkesville, Ga.
J. S. Furtado, Box 803, Fall River, Mass.

STERLING RING TRAVELER CO.
FALL RIVER, MASS.

VARIABLE-SPEED DRIVE with a 9:1 ratio provides for a high winding speed on this cloth-room unit when high production is desired.

to take the weight of 36-in. rolls of cloth without vibration. Other structural parts are equally sturdy.

For greater flexibility in operation, there is a variable-speed drive with a 9:1 ratio, a greater range than is usually given to inspection units.

Reverse wind and an automatic overrun prevention brake on the let-off are standard.

A vertical light box or through-lighting in the inspecting table are available.

Circle T-23 on Reader-Service Card

Fiber Microtome Has Improved Tongue Design

A sturdier tongue design that permits more rapid packing of fibers to be examined has been added to the latest-model fiber microtome developed by Mico Instrument Co., 76 N. Trowbridge St., Cambridge 38, Mass.

In addition, a hard-chrome finish has been given to the top cutting plate. The smooth, hard reference surface makes testing easier for the operator when sectioning of fibers is to be done.

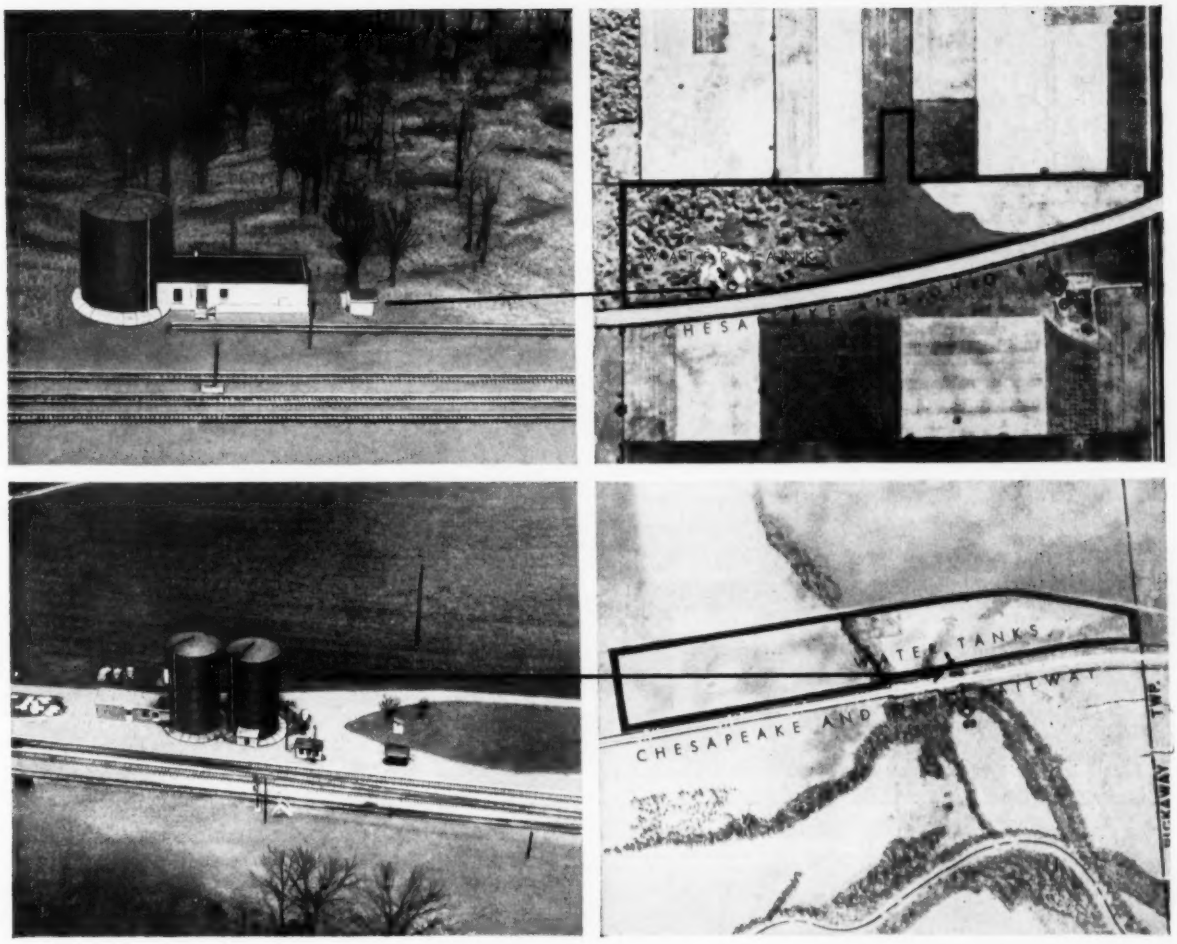
Circle T-24 on Reader-Service Card

Five-Range Tachometer Has Overfeed Safety Device

A universal five-range tachometer, Type UO, with an improved slip-coupling overspeed device, has been put on the market by Herman H. Sticht Co., Inc., 27 Park Place, New York 7, N. Y. Damage to the instrument's mechanism is prevented in case an operator should accidently overspeed on the wrong range.

The instrument reads directly in revolutions per minute. Speed fluctu-

For more information, write direct or use Reader Service post card.



Do You Need a Building Site with Good Water?

Is your business one that needs pure, soft water?

You see, we used to need water, too. Boiler water. We were very fussy about the kind of water we gave our locomotives. Because of greater use of Diesels, we are retiring a number of wells, pumping plants, tanks and softening plants. Some of these installations are on large, level plots along our railway with access to good highways as well as rail sidings.

For instance, we have two good locations near Columbus, O. One of them 16 miles north, near Delaware, O., has a plot of 45 acres with adjoining property that can be acquired; and another 30 miles south at Circleville, O., has 90 acres. Others are available in Indiana, Michigan, Virginia, West Virginia and Ontario.

Tell us how much land you want and where you want it. We'll offer you a complete installation for much under its reproduction cost. For further details, write to Chesapeake and Ohio Railway, Cleveland 1, Ohio, Detroit, Michigan, Huntington, West Virginia.

Chesapeake and Ohio Railway

SERVING:

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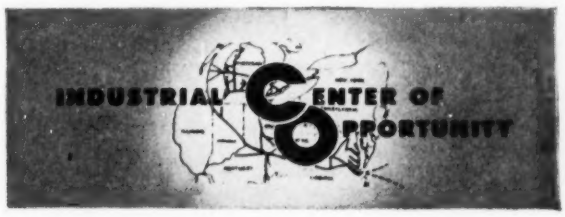
INDIANA · MICHIGAN · SOUTHERN ONTARIO



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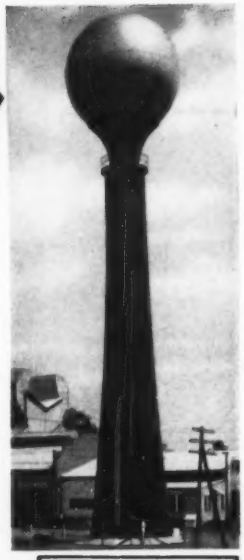
Spherical Tanks on Tubular Towers



The COLE Spherical Tank on Tubular Tower is unique in its field. We design and erect special tanks of this character. It provides an attractive and serviceable unit—economical to maintain, efficient in service and pleasing in appearance.

Write for special booklet on these modern, welded Spherical Tanks which provide gravity water pressure, and for copy of latest Cole catalog, "Tank Talk."

Established 1854

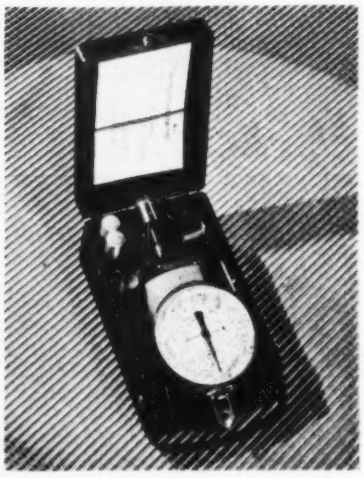
R. D. COLE MFG. CO.

NEWNAN, GEORGIA

ELEVATED TANKS • VESSELS • CYLINDERS
TOWERS • BINS • STANDPIPES

ations can be readily observed. Either direction of rotation, any testing position, and any temperature are variables in operation that do not affect the accuracy of the instrument.

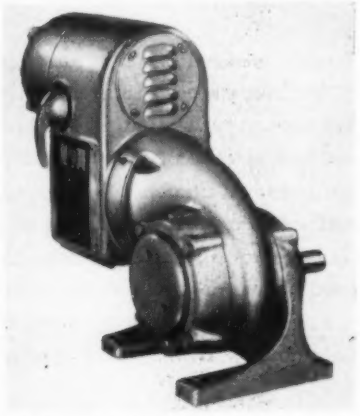
Four models have been developed, each with five speed ranges that give a total of about 35 ins. of aggregate scale length, with hundreds of subdivisions. Models range from 30 to 12,000, 45 to 18,000, 60 to 24,000, and 120 to 48,000 rpm.



NEW SLIP COUPLING prevents damage to the mechanism if, when making a reading, you should happen to overspeed on the wrong range.

Circle T-25 on Reader-Service Card

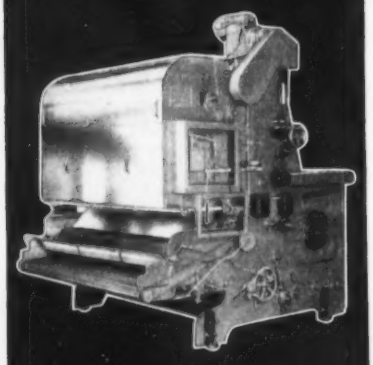
Three New Motors Developed in California



RIGHT-ANGLE HOOKUP of the Type VA-GW fractional-horsepower variable-speed drive is designed for applications requiring low, variable speeds with variations up to 10:1. Units of ¼, ⅓, ½, and ¾ hp. are available. A full range of speeds is obtained by turning the control handle within an arc of 300°.

New developments in motors recently put into commercial production by

Geo. S. HARWOOD & Son



SPECIALISTS IN TEXTILE FEEDING MACHINERY SINCE 1863

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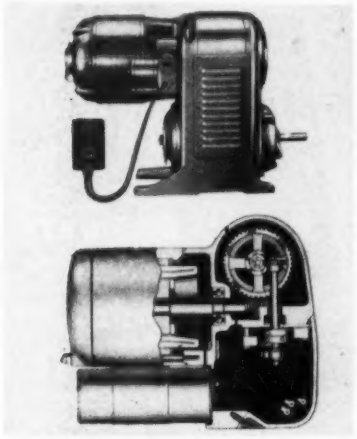
U. S. Electrical Motors, Inc., Box 2058, Terminal Annex, Los Angeles 54, Calif., include (1) a new fractional-horsepower Varidrive with right-angle synchrogear, (2) a remote-control motor that controls variable-speed motors, and (3) a 75-hp. enclosed turbine-pump motor.



PUSH-BUTTON OPERATION of the enclosed auxiliary motor provides a positive, electrically driven control for the company's line of variable-speed motors. There is no control handle. The push buttons can be set up at a control station some distance from the motor. The auxiliary motor is 1/15 hp., 1,800 rpm., of the reversible capacitor type.

POWERING OF TURBINE PUMPS is the task of the explosionproof vertical motor that is available with either a hollow or solid shaft. Double-enclosed construction gives protection against dust, dirt, moisture, abrasives, and corrosion-forming drippings. A large built-in fan throws off generated heat rapidly.

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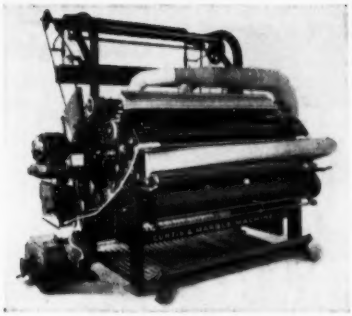

HIGH SPEED WOOLEN SHEAR

The new "Yankee Clipper" Shear has separate motors for the revolver, feed and brushes; the motor for the feed having variable speed device to give 20 to 50 yards per minute. Hoods with piping to remove the flocks from the machine. Heavy cutting parts with alloy blade.

Send for Catalog 12-51

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IHE Resin Curing Machines, direct fired with either gas or oil, give wider temperature range and more positive temperature control than with steam. The tension control features of this machine make it ideal for embossed goods. Easily adaptable to curing of water repellent and wrinkle resistent resin finishes.
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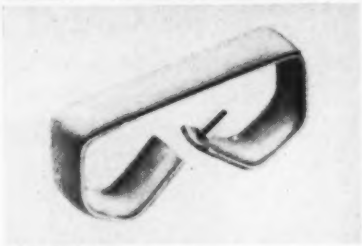
Curved Carton Stitching Uses Lighter Wire



ARCUATE WIRE STITCHING, a new carton-stitching method developed by Acme Steel Co., 2840 Archer Ave., Chicago 8, Ill., takes regular flat stitching wire, puts an arc into it prior to the stitch-forming operation, and then drives and clinches the stitch at higher speeds.

The arc shape of the wire (arrow) gives these stitches higher column strengths; so the stitches can be made from lighter-guage wire. A saving in wire cost results. Each coil of wire will thus produce a greater number of stitches.

For example, by using .103x.014-in. wire instead of .103x.020-in. wire, a coil of the same weight will deliver 42% more stitches. Translated into dollars, this amounts to a 24% cost saving per coil.

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Speed-Reduction Units Have a 13-to-1 Ratio

A new 13-to-1 ratio series of shaft-mounted speed reduction units has been introduced by American Pulley Co., 4200 Wissahickon Ave., Philadelphia 29, Pa. Retaining all the features of the original 20-to-1 series, the new Shaft-King units extend the advantages of V-belt drives to cover a wide variety of slow-speed equipment.

Adaptable to any shaft size up to 3½ in., the speed reducers require only standard shaft lengths (twice the shaft diameter, plus clearance) to be mounted directly on the shaft of the driven machine. Two trains of flame-hardened helical gears reduce the driven-shaft speed to obtain the 13-to-1 ratio. Gearing and bearings are continuously splash lubricated.

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Chicago Pneumatic's horizontal duplex, Class H steam-driven compressor brings real operating economies to plants where low cost steam or exhaust steam is available. Economical steam end proportioned to plants' steam conditions, automatic cut-off governor, and Simplate valves are just a few of the many outstanding features that add to the machine's long, dependable life and high overall efficiency.

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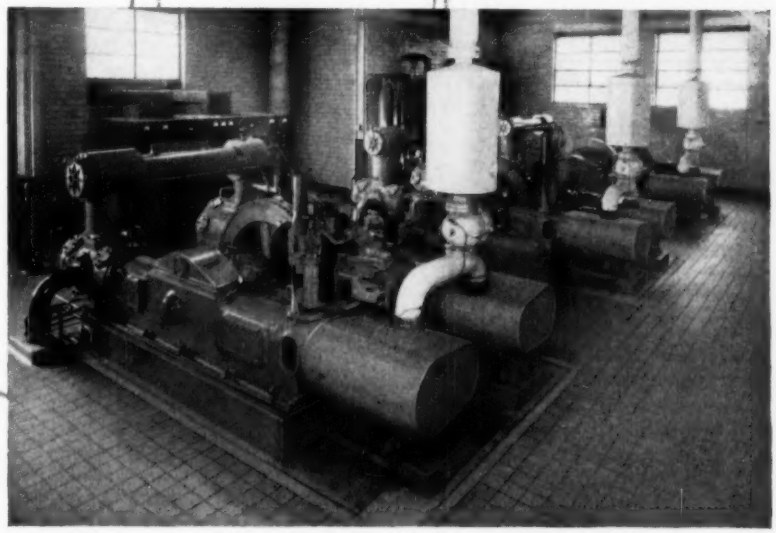
Chicago Pneumatic Tool Company, 8 East 44th Street, New York 17, New York.



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(Including Acetate)
HANDBOOK FOR TEXTILE MILLS
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A compilation from many of the outstanding technicians in the textile industry, this book tells exactly how to use rayon and acetate on present or available equipment, bringing you, in the Second Edition, the improved techniques and methods. It describes advanced but accepted practices in all divisions of the industry — cotton, woolen, worsted, synthetic, knitting, finishing. Covering the spinning of rayon staple by the three principal systems, and throwing, weaving, knitting, dyeing, and finishing—all phases of textile manufacture—it shows the profitable ways to process rayon and acetate into yarn, gray goods, and finished fabrics. **By American Viscose Corp. 2nd Ed. 335 pp., 108 diagrams and photos, $7.00**

NYLON TECHNOLOGY
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The book deals with the approaches and techniques applicable to the processing of nylon staple on the cotton, worsted, and woolen systems of spinning. It discusses the processing techniques in regard to continuous-filament nylon as applicable to throwing, slashing, quilling, and the weaving, full-fashioned, and tricot industries. Significant chapters cover the employment of nylon staple for half-hose and outerwear fabrics. **By K. H. Inderfurth, Textile Eng. 335 pp., 113 illus., $6.50**

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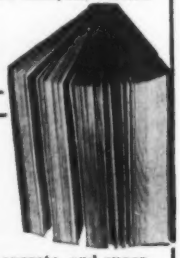

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Questions and Answers

(Continued from page 159)

Preset or Weave Wider If Nylon Is in the Filling

Technical Editor:

We recently started making a fabric with filling that has a filament-nylon core and a cotton cover. When we shrink this fabric, our wash width is about an inch narrower than the same goods with an all-cotton filling. What is the cause of this excessive shrinkage, and what can we do to correct this condition? (9656)

Nylon is a thermoplastic fiber. When subjected to heat, it stretches under tension; but it will contract if no tension is applied.

No tension is on the filling when the fabric is subjected to high temperatures on the cylinder of the compressive-shrinking machine. The nylon contracts, and the fabric comes in to a narrower width than if the filling were entirely cotton.

Depending on the percentage of nylon in the filling, it is possible to hold the goods to the same width as a fabric with an all-cotton filling; however, when these goods are given a wash test, the wash width is less.

There are three possible solutions to this problem:

1. Preset the nylon on the package by subjecting it to a temperature higher than the temperature of the shrinking-machine cylinder. This solution is not very practical because the nylon packages are tightly wound, and it would be difficult to thoroughly heat the package evenly throughout.

2. Another solution would be to run the goods through a hot tenter at the width desired and at a temperature higher than the shrinking-machine cylinder. Once the nylon is set at a given temperature, it will not shrink unless exposed to a higher temperature.

3. If the fabric can be reeded wider in weaving, the extra width off the loom will take care of the shrinkage on the shrinking machine. The width in reed can be determined from the amount of shrinkage on the shrinking machine and the finished width desired.

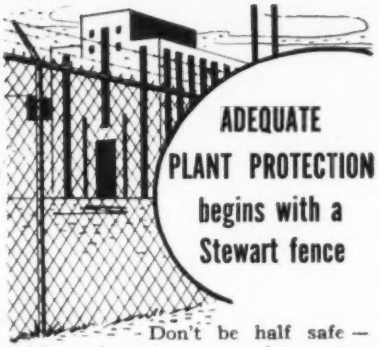
How Horsehair Is Treated

Technical Editor:

Is there any special machinery required for the curling and rubberizing of horsehair?

From whom can be obtain the machinery, bristles, and the rubber product? (9508)

Curled hair is usually made from a mixture of mane hair and tail hair



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Don't be half safe — while you're at it, get complete protection. It could save you many thousands of dollars and countless hours of lost production. Plant protection is our business, so talk it over with Stewart. We produce many products designed for this purpose. For example: chain link wire and iron picket fence; wire window guards; wire mesh partitions; steel folding gates, and skylight guards. Also, all-steel settees, steel flagpoles, bronze plaques and other items. Stewart literature gives you the whole story. Write for it today.

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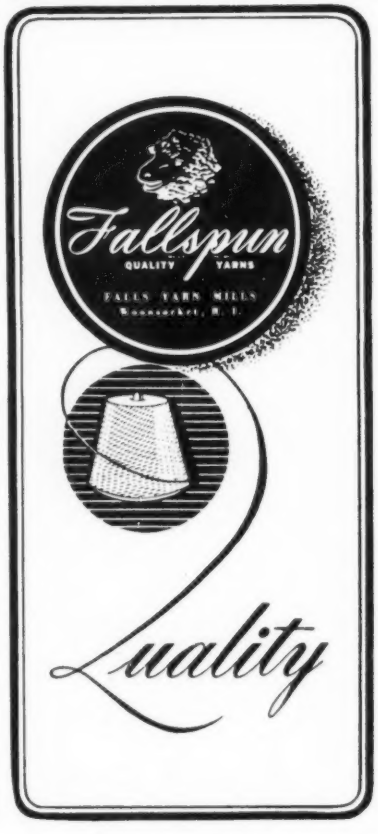

TENSION LINKAGE

WHAT'S THAT ?

Some designers have been asking us what we mean by the term "tension linkage." We use it to describe any chain application in which the linear movement of the chain is not continuous in direction. The predominant feature of a tension linkage application is that the chain need not be formed as an endless chain belt.

There is a wide variety of possible tension linkage applications.

here's an example

Reposition of a shaft that has been rotated through a limited angle. The shaft is turned clockwise (as shown in the illustration) during some operation of the associated equipment. The resulting compression of the spring provides the energy necessary to return the shaft to its original position. In many cases of this type, operation is frequent and high shock loads are encountered, so *chain* is the answer.

Our Bulletin No. 51-10 contains complete details on why Baldwin Rex® Roller Chains, Leaf Chains and Block Chains are ideal for tension linkages. It also contains application examples and tables of weights, strengths and dimensions. Write Chain Belt Company, 346 Plainfield St., Springfield 2, Mass., for it today.

BALDWIN-REX

ROLLER CHAINS

A PRODUCT OF

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from horses. The two types of hair are usually twisted, more or less as a hand operation, with a power-driven swivel hook. The hair is fed from a sack or bag carried around the operator's neck like an apron, and by means of the power-driven hook it is twisted as tightly as possible into a rope-like form. The strand is twisted up so tightly that it snarls to get the maximum amount of twist in it.

In this form the hair is usually boiled or steam treated and then dried and aged at least two months to permit the twist to set. This curled hair is available from Armour, Wilson, and several other suppliers through the United States.

The second stage of the operation, the making of a rubberized pad from curled hair, consists of buying the curled hair from one of the makers after it has been properly aged. First the curled hair is untwisted in the rope form, generally with the same type of swivel hook, but there are some small machines made in which the rope can be fed through an untwisting device that knocks it apart to a fair degree. Before the hair is completely opened, it has to be put through a machine such as a wool mixing picker.

The next stage in the operation of making the untwisted curled hair into a pad or batt is spreading. The machine used for this operation, a spreader, is an opener with feed rolls and a main cylinder covered with coarse metallic clothing or pin lags.

The spreader feeds the fiber in a loose form onto a conveyor apron, usually of the steel-plate type, over which is usually mounted a spray attachment to put a light spray of rubber on to bind the mass together. This mass is usually dried in a small drying machine that follows. After this operation the pads are usually stamped out to shape or cut with tailor's cutters.

The next operation is the final spraying of the rubber with spray nozzles that usually apply the rubber on both sides of the pad. In some plants the entire pad is dipped into the rubber solution and then allowed to drain. These details depend on what proportion of rubber is wanted on the amount of hair pad that has been laid up on the spreader machine.

The final operation is the final drying or aging of the sprayed pad so that the material comes out ready to make the cushioning material or whatever else it is to be used for.

Machinery for this processing is made by Proctor & Schwartz, 7th St. & Tabor Road, Philadelphia 20, Pa. The hair can be purchased from meat packers, and the rubber can be bought from U. S. Rubber Co. or several other suppliers.

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We can supply
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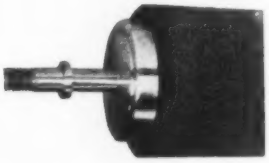


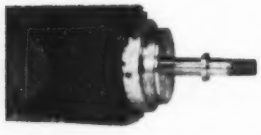
"FINESET"

Note the dense bristle and smooth surface of this typical In-Dus-Co furnisher brush.

This is an extremely light, metal core brush with fine, even bristle, set in water, alkali, and acid-resisting plastic, with no metal used in binding the bristle onto the metal core.

Many users report that it carries more color and cleans the engraved roll better than do tufted brushes.

TUFTED



With metal core, and metal wound—for those who prefer this construction. Incorporates specific improvements not found in other brushes of this type.

Both types of In-Dus-Co brushes may be dynamically balanced if specified. Bristles are renewable.

Send for the full facts about both these efficient brushes.

INDUSTRIAL
BRUSH COMPANY
WOODSIDE AVENUE
LITTLE FALLS, NEW JERSEY

V-Belt Selection

(Continued from page 131)

given above can be found from the general equation for any V-belt drive:

$$K = L - 1.57(D + d) - \frac{D^2 - d^2}{157(L - R)} \quad (2)$$

$$\text{over } 2$$

where the symbols are as before and

$$R = \frac{\text{driver rpm.}}{\text{driven rpm.}}$$

Hence,

$$K = 78.1 - 1.57(14.5) - \frac{9^2 - 5.5^2}{1.57(78.1 - 1.64)}$$

$$\text{over } 2$$

$K = 27.45$ in., closely.

Arc of Contact

The arc of contact of the belts is given by:

$$AC = 180° - \frac{60(D - d)}{K} \quad (3)$$

or,

$$AC = 180° - \frac{60(9 - 5.5)}{27.45} = 172.35°$$

How Many V-Belts?

V-belts used in textile drives are most frequently installed in multiple because a single belt cannot transmit the required power. Table IV summarizes power ratings for belts used on textile machinery. Belt speed = 0.262dS, where S = motor rpm.; or for this opener, 0.262(5.5)(1150) = 1,656 ft. per min.

From Table IV, for a E section, with a 5.5 motor-sheave pitch diameter and a 1,656-ft.-per-min. belt speed each belt can transmit 2.1 hp. Correcting for arc of contact and using the factor 0.98 from Table V, horsepower per belt = 2.1(0.98) = 2.06. Since actual horsepower of the drive is 8, 8 to 2.06, or 4, belts are required.

This problem indicates the principal methods in use for textile-mill belt selection. Some belt manufacturers use slightly different tables from those presented here, but the basic data are essentially the same. Selection procedure for V-flat belt drives is similar to that used for standard V-belts.

As can be seen by a study of this example, the service factors used are most important in final belt selection. In general, a factor somewhere between 1.2 and 1.8 should be selected, according to whether moderate or severe service conditions are expected in the mill. Mill maintenance men and foremen are often better equipped to select V-belts than an outside engineer because they have a complete knowledge of actual operating conditions in the mill.

13 See page 231 for details

COPPER DRY CANS,
REBUILT or RECOVERED with STAINLESS STEEL

Now a mid-west experienced company offers you this specialized service—saving you production costs, equipment costs, and freight charges.

We are at present serving a number of companies and have the facilities for handling volume work promptly.

We also do tinning and re-tinning.

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CONDENSERS

Built To Your Specifications

Here is a modern service that you can depend on for high grade results. We make dry cans with copper buckets instead of steel, to greatly increase the life of the dry cans. We work in stainless steel, monel, nickel, and aluminum as well as copper.

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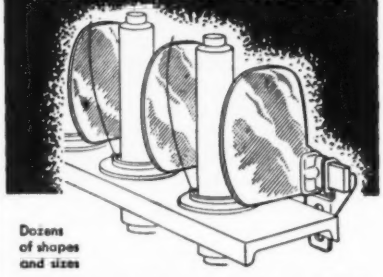

Dozens of shapes and sizes

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- **Fewer ends down—some mills report 27% less**
- **Use two numbers lighter travelers for higher-strength yarn**
- **Polished aluminum blades stronger than steel—much lighter—cost less**
- **Non-slotted blades mean less wear on yarn, less lint, fewer slubs**
- **7,000,000 in use by more than 400 mills**

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And, furthermore, many advertisers will take space in this issue to provide you with the data you need to specify accurately just the equipment, supplies, or services that you require to improve your job.

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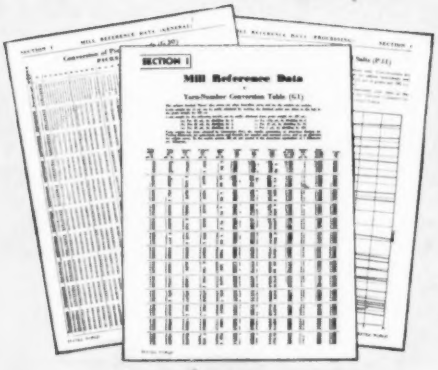
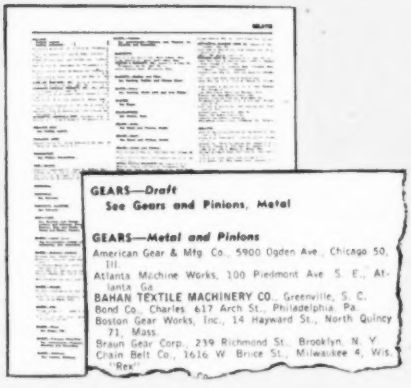


BUYERS' GUIDE SECTION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GEARS—Metal and Pinions
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Atlanta Machine Works, 100 Piedmont Ave. S. E., Atlanta, Ga.
BAHAN TEXTILE MACHINERY CO., Greenville, S. C.
Bond Co., Charles, 617 Arch St., Philadelphia, Pa.
Boston Gear Works, Inc., 14 Hayward St., North Quincy 71, Mass.
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TEXTILE WORLD

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(below) Inside the Ko-Nit mill, a quality fabric is produced with up-to-date equipment under the finest operating conditions. Air-Perme-Ator safeguards both delicate machinery and fabrics here.

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"DRY" HUMIDIFICATION

—maintains constant year 'round conditions of 78°F, temperature and 70% relative humidity in the Ko-Nit Textile Corporation plant in Englewood, New Jersey, one of the most modern and efficient nylon tricot mills in the East.

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Proper atmospheric conditions are assured for consistent quality production. *Yet not the smallest visible particle of moisture is released to rust machinery or damage fabrics.*

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Comfort cooling is achieved economically with Artesian Well water.

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Planned Interviewing

(*Continued from page 101*)

and bring it right up to date. I will be interested in your exact duties on the job, anything you liked or disliked about it, your level of earnings, your reason for leaving, and any special responsibilities you held."

Just try to answer Yes or No to that one! You have definitely handed him the ball, and it is up to him to carry on from there; however, he will need prompting from time to time. If he drops any clue that would indicate anything in his disfavor, you must tactfully pick these up and explore them further; but if you want to learn the truth, you must not give any indication by voice or facial expression that the applicant has tripped in any way.

Be a Good Listener

During this type of interview, you are always on the applicant's side. If he tells you that he didn't get a square deal from his last employer, you acknowledged that this does sometimes occur and that it can create a very unpleasant working situation. At the same time, you should delve more deeply to find out just what did occur; perhaps he has the proverbial chip on his shoulder.

It is natural to want to talk about ourselves, and being an appreciative audience is the role of the interviewer. A little subtle flattery goes a long way in drawing out the applicant. If he remarks that he got an increase in pay shortly after he went on a job, you can always say, "You must have been doing a good job for them to show their appreciation so early." By putting in such remarks at every opportunity, you lead the applicant to expand and feel that here is someone who really understands him. Then you have no difficulty in getting all the information you want painlessly and without the cross-examination technique.

While the applicant is talking, watch carefully for evasions, hesitations, and changes in facial expressions —the intangible clues that tell an interviewer more than the spoken word. Watch also for contradictions in his story and for a defensive attitude. Help him most when he hesitates, because hesitation is an indication that he has reached a point that he is not proud of or that he thinks reflects on him in some way.

School Experiences Give Clues to Personality

After you have explored the working experience to your satisfaction,

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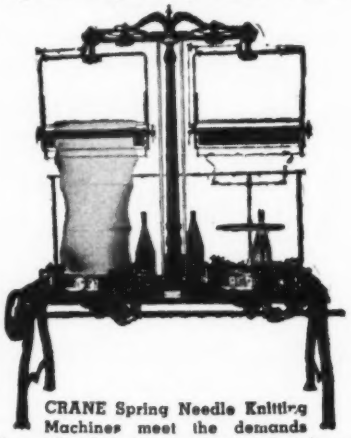

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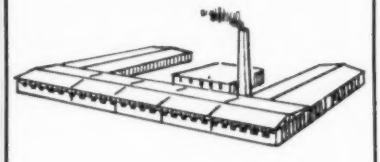

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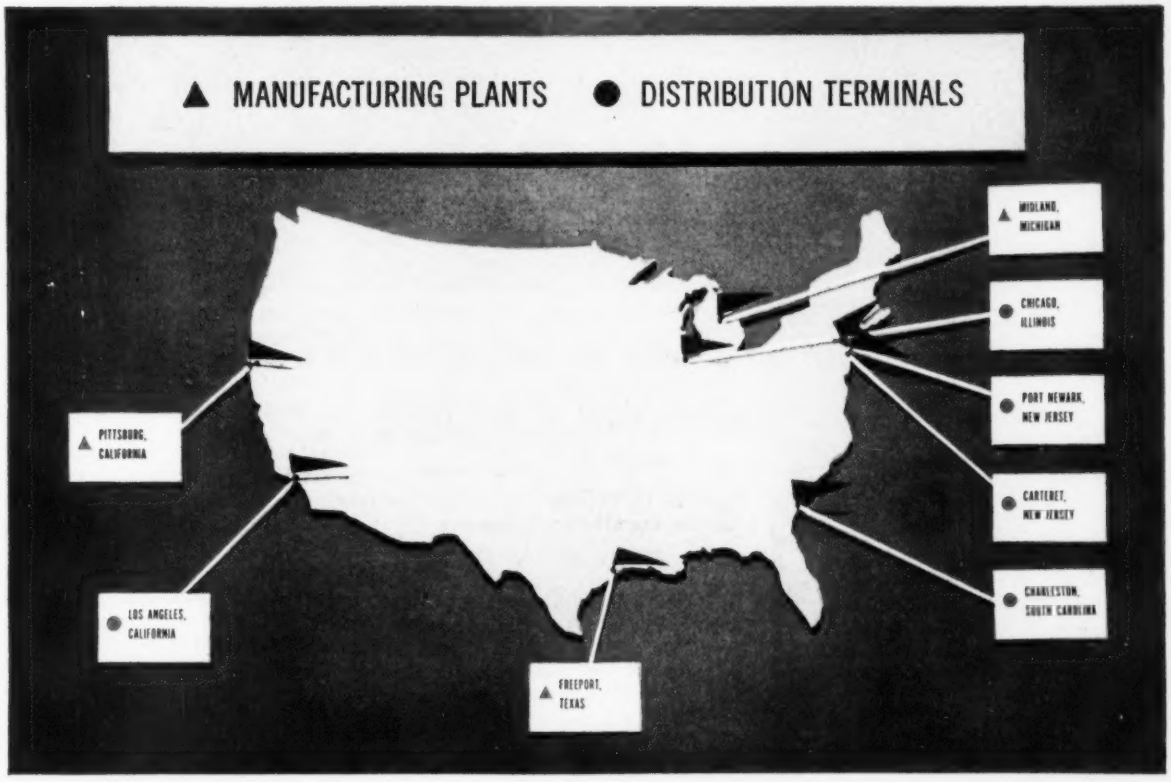

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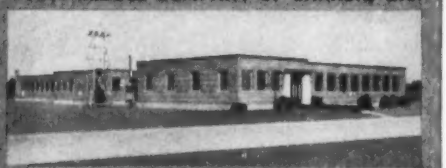
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the next lead question is: "I think that gives us a pretty good idea of your working experience. Now, suppose you tell me something about your schooling. I'd be interested in which subjects you liked or didn't like, your level of grades, any special training you have had, and what you were interested in in the way of outside activities."

Watch to see if the applicant enjoyed his school experiences, if he seemed to have friends and to have participated in group activities.

If he left school before graduating, what was the reason? Was it lack of interest, or did he have to assume financial obligations? The latter would indicate that he shouldered responsibilities early and would be a favorable sign of maturity.

If he preferred the movies and reading to group activities, he might have difficulty getting along with a group. On the other hand, if he participated in sports and enjoyed parties and dancing, he probably has an outgoing personality that will attract people and probably has some competitive spirit. In this area, too, you should applaud his successes and sympathize with his failures.

By this time you should have won his confidence, since you have shared these experiences with him in retrospect, always in the role of his champion and backer-upper. You are now ready to go into the most personal side of his history, his early childhood.

Loyalty to Family Means Loyalty to Company

The lead question for this area is phrased this way: "John, I think you will agree with me that what we turn out to be as adults depends to a large extent on the things that happen to us when we are children. For this reason, I will be interested in anything you might tell me about your early home background. I would like to know how many members there were in your family, what your father did for a living, what your mother and father are like as people, or anything you think might have influenced you."

This question is the one that really pays off, if you have done a good job with the two preceding questions. An individual receives his impressions of integrity, dependability, and loyalty from the home. An applicant who shows evidence of a strong feeling of family loyalty will almost invariably transfer this loyalty to his company and his job. You want to watch carefully for indications of emotional instability and lack of maturity. These traits are reflected on the job in blowing up under pressure, resentment towards management, and excessive absenteeism.

At the conclusion of the interview, you should have a very definite picture of the applicant's personality and enough factual information for you to make an intelligent decision. However, this type of interview is not foolproof and does not guarantee that you will not make mistakes in selecting employees. But from experience, we know that it will improve your batting average and will screen out some mistakes you might otherwise make.

Drawing Uniformity

(*Continued from page 115*)

following improvements in sliver evenness:

Breaker drawing—16.7% better
Finisher drawing—37.2% better

Similar drafts have been used in Europe for some time on four-roll frames, according to a Danish source.

Tests made after overhauling alone did not show an appreciable improvement in evenness; thus the improvements can be entirely credited to the draft changes we made.

We could not well go below 1.08 or 1.09 for the middle draft zone (see sketch), for if we had to put in a coarser over-all draft gear we would come out below 1.08. However, if the change is not too great, the draft will not go below 1.00 and will not cause bulking-up between rolls II and III. A more costly arrangement could be installed if it is desired to make the middle-zone draft an absolute constant.

Too-high drafts and incorrect settings tend to destroy sliver evenness. Stretch in the tension area can ruin all the efforts put into good preparation before the roving process.

Tips on Other Processes

It is necessary to pay attention to all drafting and blending machinery and processes.

Opening: Cotton mixings should not be done with less than 12-bale lots. If a lot of 100 bales averages a Micronaire reading of 4.5 mg. per in. (American), each mixing lot should also average 4.5. Bales with extreme Micronaire readings should be spread sparingly over several mixes.

Pickers: Picker laps are the first product to which weight control is applied. A reasonable leeway from the given lap-weight standard should be sufficient if the leeway is not too liberal; after all, we cannot weigh laps

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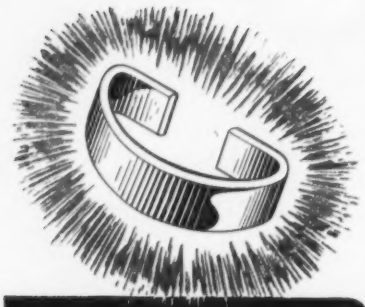

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CRAWFORD "JACK" RHYMER, BOX 2261, GREENVILLE, S. C.

on a druggist's scale. A single stripping at the cards affects weights more than the expected damage from an occasional heavy or light lap.

Cards: If cards are set correctly, there is not an appreciable fluctuation of card-sliver evenness. If there is appreciable fluctuation, a choke or some other mechanical maladjustment is usually responsible.

Lappers: On sliver lappers and ribbon lappers, the first machines where roll drafts are applied, the spacing of drafts is important. At ribbon lappers, for instance, a middle-zone draft of 1.08 to 1.10 gives good results. The intake draft is chosen in the same way it is on drawing frames,

$$0.81 \sqrt{\text{total draft}}.$$

Apply as little draft as possible at sliver lappers; 1.5 should be on the high side.

Combers: We have reaped substantial evenness improvement by adopting three-over-four rolls for our Naismith combers. We now average 20%, whereas the old average was 37.5%.

Spinning: Evenness tests statistically computed from different frames, yarn numbers, and cotton qualities furnish the final picture to see how well the preparation has been handled. It is strongly recommended that statistical procedures be used on at least the following processes:

1. Picker laps and comb sliver
2. Drawing sliver and yarn

Often, when yarn-evenness results do not show much improvement in terms of average evenness, the standard deviation is lower on the work that is done under strict quality control and improved conditions.

So far, we have not found a way to figure any actual savings from our quality drive, but we know that benefits are being passed to our customers. Evenness of our yarns and threads has improved about 10% since our quality-control program was inaugurated.

Where do we go from here? One potential source of savings from better evenness is the use of single roving instead of double roving in spinning. Another possibility is the elimination of one drawing process if the uniformity from the combers and drawing frames keeps improving.

Machinery Organization for Blended Yarn

(*Continued from page* 107)

Good results are being obtained with several other different methods of processing. Satisfactory yarns are obtained from processes that start with the converting of tow in place of the carding of cut staples. If end results can justify the means, converting may very well be used in place of carding.

Consider Several Methods With Wool in the Blend

To produce yarns suitable for the third range of fabrics, machinery is the same as that prescribed for the long-staple synthetic fibers. A suitable procedure for manufacturing a blended yarn of fine wool and Orlon is to card the Orlon and blend with wool top on the first pin-drafting operation after carding. A minimum of three pin-drafting operations is necessary to attain adequate blending. In some cases it is necessary to increase the number of pin-drafting operations to four. Roving and spinning equipment is similar to the types previously discussed for long- and short-staple fibers.

Blends of short wool and short synthetics are being processed today on cotton-type machinery as well as on woolen and worsted machinery. Short-length scoured wools can be processed through a standard cotton picker, carded on 40-in. roller top cards, and given one or two processes of drawing followed by lap winding. Combing can be accomplished in a specifically designed double-sided cotton comber that delivers a wool sliver at high production. Short-staple-synthetic card sliver can be blended in drawing with the combed wool sliver and given two or three processes as desired. Modified cotton roving and spinning machinery can be employed, as previously mentioned, for producing the blended yarns.

On this system a good yarn can be manufactured, but the wool fiber must be selected to fit the range of the comber. If this point is not considered, great difficulty will be encountered in detaching the long fibers; and uneven combing will result. Nappiness is very apt to be a characteristic of this type of processing, but not to a dangerous degree if controlled.

Experience today proves quite conclusively that in the selection of machinery necessary to produce blended yarns and fabrics and straight worsted-blend fabrics, consideration must be given to the full range of requirements, and recognition must be given to the limitations of existing machinery.

News OF THE MONTH

FLAMMABLE-FABRICS ACT SIGNED

A Federal law, to go into effect in a year, designed to prohibit the introduction or movement in interstate commerce of articles of apparel or fabrics that are so highly flammable as to be dangerous when worn by individuals, has been signed by President Eisenhower. Also covered are vinyl films intended for apparel use. Basis of the law are Commercial Standards CS-191-53 for apparel fabrics and CS-192-53 for general-purpose vinyl-plastic film to be used in rainwear and similar items.

CANADIAN TRADE FAIR

Interesting textile machinery from several European countries was exhibited at the 6th Canadian International Trade Fair in Toronto, Ont., recently. Included in the 264,000-sq.-ft. exhibition, which contained mostly other types of heavy equipment, as well as consumer products, were a German 23-step links-and-links jacquard sock knitter, a Czechoslovakian heavy-hose knitter with four striping attachments, a German 5,000-stitch-per-minute industrial sewing machine, and a British automatic three-color no-ink fabric labeler.

TWO GIFTS FOR PTI

CHECK for $5,000 from the Knitted Outerwear Manufacturers Association, Pennsylvania District, and a new $8,500 jacquard knitting machine donated by Jacquard Knitting Machine Co. of Philadelphia, were recently presented to the Philadelphia Textile Institute at a ceremony held at the college in Germantown, Pa. David Rosenblatt (left), treasurer of the outerwear group, made the check presentation to Dean Richard S. Cox, treasurer of the PTI Foundation Development Fund.

NEW COLOR INDEX IN 1955

Publication of the second edition of *The Colour Index*, a joint AATCC-British Society of Dyers and Colourists project that has been in the works for eight years, is announced for 1955. The new edition, succeeding the original work published in 1924, will be made up of five volumes totaling 2,100 pages. It will deal with 5,000 dye entities and 25,000 commercial names, with groupings relating to their main usage, such as acetate, acid, azoic, direct pigment, etc. Included will be the manufacturers' initials, method of application, fastness properties, established usages, reactions on the fibers, and literary references relating to application.

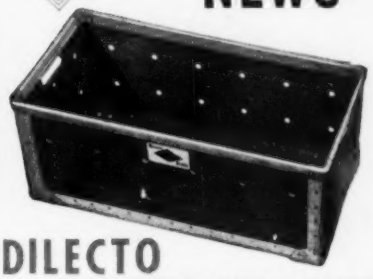
The new edition will also contain

NEW LTI DIVISION CHAIRMEN

ALL TEXTILE COURSES AT LOWELL have been regrouped under four divisions. Chairmen of the divisions, with LTI President Martin J. Lydon in the center, are, left to right: Professors E. E. Fickett (chemistry), J. H. Kennedy, Jr. (textile manufacturing), C. F. Edlund (general studies), and H. J. Ball (engineering).

...From SPARTANBURG, S. C.

CDF TEXTILE NEWS



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NEWS of the Month

data relating to chemical constitution, method of preparation of the dyes, patent and literature references, and solubilities and reactions of about 3,800 dyes and pigments.

The monumental work is priced at $85 if payment is made before the first of next month, $93 on a three-payment plan, and not less than $99 after publication.

0.81-OZ. FIBERGLAS CLOTH

An 0.001-in.-thick and 0.81 oz.-per-sq.-yd. glass fabric has been woven by Soule Mill, New Bedford, Mass., with Fiberglas yarns finer than any ever before produced. Applications for the diaphanous fabric are seen in the electrical-apparatus field, where, as the carrying medium for mica and insulating varnishes, its thinness will permit design engineers to further reduce space-factor requirements.

MANCHESTER SHOW IN OCTOBER

The forthcoming *Textile Recorder* Machinery Exhibition to be held in Manchester, England, October 14 to 24 will occupy 151,720 sq. ft. of floor space, compared with 101,300 sq. ft. in 1949. Booth space has been increased from 55,000 to 88,525 sq. ft. There will be 235 exhibitors, as against 136 four years ago. British participants number 183 and overseas ex-

Textile Calendar

AATT, monthly meeting, Builders Club, New York, Sept. 2.

Fiber Society, fall meeting, LTI, Lowell, Mass., Sept. 10 and 11.

AATCC, Phila. Sect., Kugler's Restaurant, Philadelphia, Pa., Sept. 11.

AATCC, Piedmont Sect., Hotel Charlotte, Charlotte, N. C., Sept. 12.

International Fair of Ghent, Palais des Floralies, Ghent, Belgium, Sept. 12 to 27.

AATCC, national convention, Conrad Hilton Hotel, Chicago, Ill., Sept. 17 to 19.

NACM, 99th annual meeting, Wentworth-by-the-Sea, Portsmouth, N. H., Sept. 24 and 25.

Northern Textile Association, 1st annual meeting, Wentworth-by-the-Sea, Portsmouth, N. H., Sept. 24 and 25.

AATCC, New York Sect., Swiss Chalet, Rochelle Park, N. J., Sept. 25.

Quartermaster Assn., annual convention, Lord Baltimore Hotel, Baltimore, Md., Oct. 1 and 2.

AATCC, Western New England Sect., Rapp's Restaurant, Shelton, Conn., Oct. 2.

AATCC, New York Sect., Swiss Chalet, Rochelle Park, N. J., Oct. 3.

AATT, monthly meeting, Builders Club, New York, Oct. 7.

ASQC, Carolinas Sect. (successor to the Textile Quality Control Assn.), fall meeting, School of Textiles, N. C. State College, Raleigh, N. C., Oct. 9.

Packaging Institute, annual forum, Hotel Statler, New York, Oct. 12 to 14.

Textile Machinery and Accessories Exhibition, Belle Vue, Manchester, England, October 14 to 24.

North Carolina Textile Mfrs. Assn., annual meeting, Carolina Hotel, Pinehurst, N. C., Oct. 15 and 16.

National Safety Congress and Exposition; Conrad Hilton, Congress, Morrison, and Hamilton Hotels; Chicago, Ill.; Oct. 19 to 23.

Industrial Packaging and Materials Handling Exposition, Mechanics Building, Boston, Mass., Oct. 20 to 22.

AATCC, R. I. Sect., Providence Engineering Society, Providence, R. I., Oct. 22.

AATCC, Phila. Sect., Kugler's Restautaurant, Philadelphia, Pa., Oct. 23.

AIEE, Textile Subcommittee, conference on electrical equipment, N. C. State College, Raleigh, N. C., Oct. 29 and 30.

AATT, monthly meeting, Builders Club, New York, Nov. 4.

AATCC, Northern New England Sect., LTI, Lowell, Mass., Nov. 6.

AATCC, Western New England Sect., Rapp's Restaurant, Shelton, Conn., Nov. 6.

AATCC, Mid-West Sect., Hotel Bismarck, Chicago, Ill., Nov. 7.

Refrigeration and Air Conditioning Exposition, Public Auditorium, Cleveland, Ohio, Nov. 9 to 12.

TRI, annual meeting, Commodore Hotel, New York, Nov. 12 and 13.

AATCC, New York Sect., Swiss Chalet, Rochelle Park, N. J., Nov. 20.

Exposition of Chemical Industries, Commercial Museum and Convention Hall, Philadelphia, Pa., Nov. 30 to Dec. 5.

AATT, monthly meeting, Builders Club, New York, Dec. 2.

AATCC, Northern New England Sect., Faculty House, MIT, Cambridge, Mass., Dec. 4.

AATCC, Phila. Sect., Kugler's Restaurant, Philadelphia, Pa., Dec. 4.

AATCC, R. I. Sect., annual meeting, Sheraton-Biltmore Hotel, Providence, R. I., Dec. 4.

AATCC, South Central Sect., Patten Hotel, Chattanooga, Tenn., Dec. 5.

AATCC, Western New England Sect., Rapp's Restaurant, Shelton, Conn., Dec. 11.

1954

AATCC, Phila. Sect., Kugler's Restaurant, Philadelphia, Pa., Jan. 15, 1954.

Plant Maintenance Conference and Exposition, Chicago, Ill., Jan. 25 to 28, 1954.

AATCC, New York Sect., Hotel Statler, New York, Jan. 29, 1954.

ASQC, Textile Div., technical meeting, School of Textiles, N. C. State College, Raleigh, N. C., Feb. 4 to 6, 1954.

Phi Psi, 51st annual convention, The Carolina, Pinehurst, N. C., Feb. 25 to 27, 1954.

AATCC, New York Sect., Hotel Statler, New York, Feb. 26, 1954.

ACMI, annual meeting, Jung Hotel, New Orleans, La., April 22 to 24, 1954.

AATCC, New York Sect., Swiss Chalet, Rochelle Park, N. J., April 23, 1954.

American Textile Machinery Exhibition, sponsored by American Textile Machinery Association, Atlantic City Auditorium, Atlantic City, N. J., April 26 to 30, 1954.

AATCC, New York Sect., Swiss Chalet, Rochelle Park, N. J., May 21, 1954.

AATCC, national convention, Atlanta Biltmore Hotel, Atlanta, Ga., Sept. 15 to 18, 1954.

Southern Textile Exposition, Textile Hall, Greenville, S. C., Oct. 4 to 9, 1954.

for SHEER fire-fighting POWER

There's nothing like a Kidde Dry Chemical extinguisher for smothering fire fast. It's the only shielded nozzle dry chemical portable. That means you get the double advantage of a most effective extinguishing agent and a wide-spread, soft volume discharge that doesn't fan or drag along air. Even an inexperienced operator can attack a fire without fear behind the "cool" protective wall of dry powder that's set up. Just pick it up, point the horn, pull the trigger. Kidde Dry Chemical portables come in 5, 20 and 30 pounds. Write us today for full information.

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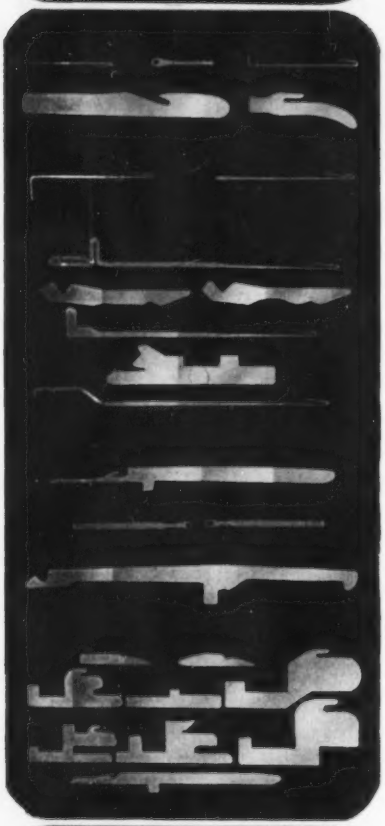
Walter Kidde & Company, Inc.,
891 Main Street, Belleville 9, N. J.
Walter Kidde & Company of Canada, Ltd., Montreal, P. Q.

THE LOYAL T. IVES COMPANY
SPRING BEARD KNITTING NEEDLES



The Ives Company manufactures all known types of Spring Beard needles — for circular, full-fashioned and tricot knitting machines.

Also, Sliders, Sinkers, Jacks, Guides, Sley Points, Looper Points, Transfer Points or Quills, for Spring Beard and Latch Needle knitting machines.

Complete line, all gauges and styles of Needles, Guides, Sinkers and Sley Points for Reiner, Avisco and Whitin Tricot machines. Also equipped for complete casting and squaring service for Tricot machines.

NEW BRUNSWICK
NEW JERSEY

NEWS *of the Month*

hibitors 52, as against 136 and 33 in 1949. Germany, not represented by any companies in 1949, this year will have 19 exhibitors, the largest overseas contingent. Switzerland has 18 this year, as against 16 four years ago.

NBTI REORGANIZES

New Bedford Textile Institute has changed its name to New Bedford Institute of Textiles and Technology. More advanced reorganization is planned by the school's officials. Present plans call for a technical division and a college division. The former would include the evening school under the same administration and faculty but under separate direction and regulation.

U. S. BENEFITS IN CANADA

The principal beneficiary of Canadian tariff and trade policies originally designed to help Great Britain and Europe, according to E. F. King, president of the Canadian Silk and Rayon Institute appears to be the United States of America. The Canadian leader said his country had gone too far with its progressive lowering of tariffs and relaxing of customs regulations. If Canadian mills do not meet the import threat with lowered costs, they are in for a rough time in the immediate future.

BOTTLED RADIOISOTOPES

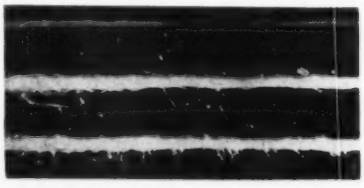
Safe, inexpensive radioisotopes, bottled and sold over the counter and by mail just like other laboratory chemicals, are now available from Fisher Scientific Co. of Pittsburgh, Pa. Users need no AEC authorization, no formal training at Oak Ridge, and no elaborate safety precautions. Twenty-five different radioactive compounds will be sold in "microcuries," a thousandth of a millicurie. Glass vials of the reagents can be packed together in large numbers without fear of radiation hazard. Price per vial: $15.

LOOPED YARNS FOR NEW FABRICS

A new yarn-manufacturing technique developed by DuPont, described by Dr. D. F. Holmes at a June meeting of the American Association for Textile Technology in New York, provides for controlled looping of individual yarn filaments in filament yarns of all types. Experimental results obtained so far show such "textured" yarn adds bulk, covering power, and dryness of hand to woven and knitted fabrics, and approaches somewhat the hand of spun-yarn fabrics.

Tenacity of the new yarns runs somewhat lower than that of basic filament yarns, but is higher than spun yarns of equal denier. Crispness can be varied by a change in loop size or denier.

Mills are to be licensed to make textured yarns themselves as soon as processing details have been worked out with equipment manufacturers.



PHOTOMICROGRAPH of a 210-den. continuous-filament yarn (top), a 20s cotton-count staple yarn (center), and a 250-den. textured yarn (bottom) shows comparatively the random loop construction of the new yarn.

Continuous-Filament, Spun, and Textured Yarns Affect a Typical Dacron Fabric Differently

	Cont. fil.	Spun	Textured
Denier	70	96 (1.5 den. per fil.)	96
Filaments	34	—	68
Oz. per sq. yd.	2.8	3.4	2.8
Thickness	0.007	0.014	0.012
Specific volume	1.9	3.1	3.2

TEXTURED-YARN DACRON FABRIC is about 80% bulkier than its equivalent filament-yarn fabric, both in thickness and specific volume, and is lighter in weight than a similar spun-yarn fabric.

CARPET-SOILING RESEARCH

Celanese Research Laboratories of Summit, N. J., have found that the use of petroleum or fatty carding oils, as well as the oily jute used for backing, is detrimental to the soiling characteristics of carpets. It has been found that certain waxy lubricants can be successfully substituted for carding oils. These materials block the effect of excessive jute oil while not increasing the soiling by other mechanisms.

"ACETATE" TO "DISPERSE" DYES

Starting in the 1954 *Year Book* of the American Association of Textile Chemists and Colorists, listing of all American-made dyes formerly called "acetate dyestuffs" will be made under the new name of "disperse dyes." The change has been decided on because this type of dye is being found very useful in coloring many of the newer fibers and is no longer confined to acetate alone. The British Society of Dyers and Colourists has already made the change.

RUSSIA HAS ITS PROBLEMS

The Soviet Union has launched a new drive to increase textile production, which fell below government goals in scores of plants during the first quarter of 1953. Warning that fulfillment of the prescribed plant "is the law," *Izvestia* listed these shortcomings in Soviet mills: (1) Proper attention to improving the quality of goods is not given; emphasis is on the cheapest fabrics. (2) Cloth frequently has poor patterns and "pale and unexpressive" colors. (3) Cloths with interesting weaves have been developed, but they have not been put into mass production. (4) Idleness of equipment is high in some branches of manufacturing. (5) Workers in a number of plants tolerate spoilage and low-quality output. (6) Goods placed on sale are frequently not entirely finished even though they are labeled as finished.

BANCROFT TAKES ON TEXTRALIZING

An exclusive license from Alexander Smith, Inc., Yonkers, N. Y., to crimp textile fibers and yarns by the Textralizing process has been granted to Joseph Bancroft & Sons Co., Wilmington, Del. The agreement includes the right to sub-license others, both in the United States and in foreign countries, under inventions relating to the crimping method and apparatus, to the setting of the crimp, and to the crimped product.

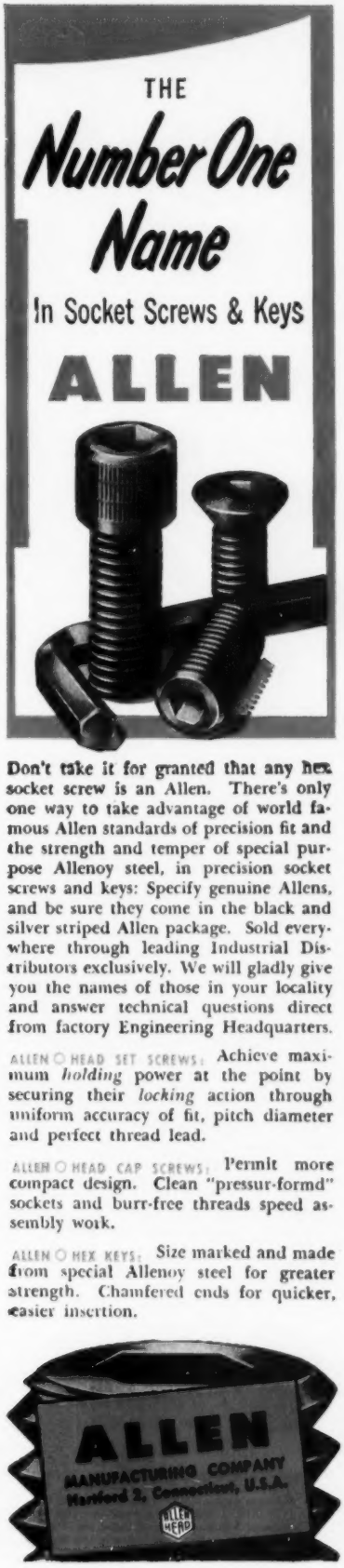
1954 EXHIBITION SEAL

SPINDLE, SHUTTLE, GEAR, AND TEST TUBE adopted as the official seal of the American Textile Machinery Exhibition of 1954 indicate the technological improvements in the U. S. textile industry that are to be seen at Atlantic City, N. J., next April. The seal for the quadrennial event is adapted from one that appeared on the cover of the November, 1952, issue of TEXTILE WORLD.

FLAMEPROOF COTTON FABRIC

TEMPERATURES UP TO 800° can be withstood by persons wearing a cotton coat like this. The coats are treated with Permaproof 300, an insoluble permanent-type flameproofing agent developed by Treesdale Laboratories of Pittsburgh, Pa. Involved in the finishing procedure, for which patents are pending, are a dip, nip, drying, and in some cases curing.

The aluminum-foil innerliner reflects a great part of the heat away from the body.

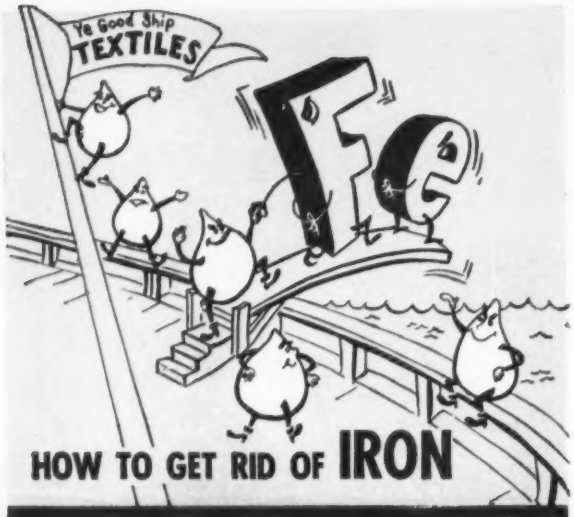


Don't take it for granted that any hex socket screw is an Allen. There's only one way to take advantage of world famous Allen standards of precision fit and the strength and temper of special purpose Allenoy steel, in precision socket screws and keys: Specify genuine Allens, and be sure they come in the black and silver striped Allen package. Sold everywhere through leading Industrial Distributors exclusively. We will gladly give you the names of those in your locality and answer technical questions direct from factory Engineering Headquarters.

ALLEN ○ HEAD SET SCREWS: Achieve maximum *holding* power at the point by securing their *locking* action through uniform accuracy of fit, pitch diameter and perfect thread lead.

ALLEN ○ HEAD CAP SCREWS: Permit more compact design. Clean "pressur-formd" sockets and burr-free threads speed assembly work.

ALLEN ○ HEX KEYS: Size marked and made from special Allenoy steel for greater strength. Chamfered ends for quicker, easier insertion.



HOW TO GET RID OF IRON

...Versene®

IRON — BANE OF PROCESSORS

In textile processing metallic contamination does things to fabrics and fibers that always spoil goods and cost money. Iron causes yellowing in white goods, prevents level dyeing, causes shade changes, spotting, streaking and is often responsible for crocking. Minute traces of copper, zinc, lead and other metals cause other problems of equal seriousness.

VERSENE ELIMINATES IRON

Versene-T, made especially to inactivate and solubilize iron and other metallic salts in concentrated caustic solutions, gets fibers and fabrics shades whiter. A *Versene* (Regular) rinse after viscose coagulation increases whiteness and tensile strength by removing lead, zinc and other metal impurities. *Versene* also extends the life and persistency of peroxide both in the bath and on the cloth. With synthetic and other detergents, *Versene* acts synergistically to get fabric and fibers cleaner. Because it removes the cause of metallic ion contamination, *Versene* can cut your costs, save yards of goods and miles of fibers. It is well worth investigation.

VERSENE QUALITY GUARANTEED

Made only under F. C. Bersworth processes and patents, the *Versenes* are guaranteed for uniformity of quality and chelating (complexing) power. Exceptionally stable at high temperatures throughout the pH range, they are available in liquid or dry form. Write Dept. D today for samples and Technical Bulletin #2. Chemical counsel on request.

VERSENE WATER TEST KIT. Tells Total Hardness in 2 minutes. Accurate to 1 grain per gallon. Versenate method. Complete with instructions $5.00 Postpaid.

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Providence Agent: George Mann & Co., Inc., 251 Fox Point Boulevard, Providence, R.I.
W. Coast Agent: Griffin Chemical Co., San Francisco, Los Angeles
Midwest Agent: Kraft Chemical Co., Inc., 917 W. 18th Street, Chicago
Wasatch Chemical Co., Salt Lake City, Utah
Southwest Agents: Barada & Page, Inc., Dallas, Houston, Kansas City, etc.
Chas S. Tanner Co., 1815 Liberty Life Bldg., Charlotte, North Carolina
Siegel Chemical Co. – Brooklyn, N. Y.

NEWS ABOUT Suppliers

EQUIPMENT SUPPLIERS

Barber-Colman Co., Rockford, Ill., has announced the addition of the following engineers to the Wheelco sales and service organization: Chicago, Robert Unger, service engineer; Detroit, Harold L. Dirkers, sales engineer, and Leonard V. Bloom, service engineer; New York, William E. King, service engineer; Boston, Lawrence S. Holbrook, service engineer, and Robert Hemman, sales engineer; Rockford, Scott R. Babcock, service engineer, and Clyde Person, service engineer.

Barco Mfg. Co., Barrington, Ill., has appointed the Rawdon Myers Agency, Cincinnati, Ohio, its district representative for southern Ohio, southern Indiana, and Kentucky.

Burlington Engineering Co., Inc., Graham, N. C., has completed its program of modernization and expansion at the local plant. Included in the construction program were the addition of 5,000 sq. ft. of working space in the plant, the complete rebuilding of the front of the plant to allow more office space and better working conditions, and the addition of a pilot plant for testing and experimentation.

Collins Brothers Machine Co., Pawtucket, R. I., has taken over all the new and replacement parts for the thread dressers and cloth stretchers of the Charles A. Luther Co., Central Falls, R. I., and will fill its outstanding orders.

Davis & Furber Machine Co., North Andover, Mass., has announced the addition to its staff of James Mansfield, Manchester, N. H.

Electric Furnace Corp., Chattanooga, Tenn., recently opened a branch plant in Charlotte, N. C., for coating machine parts with Teflon.

Gubelin International Corp., New York, N. Y., has made H. Phil Worth its Southern representative.

HERBERT P. BUETOW has been elected to the presidency of Minnesota Mining & Mfg. Co., St. Paul, Minn.

The Henneux Co., New York, N. Y., has been established to import and distribute the Tylose brand of sizing and desizing products manufactured by Kalle A. G. in Western Germany.

Lewis-Shepard Products, Inc., Watertown, Mass., has appointed H. Philip Shean as its representative in the Syracuse, N. Y., area.

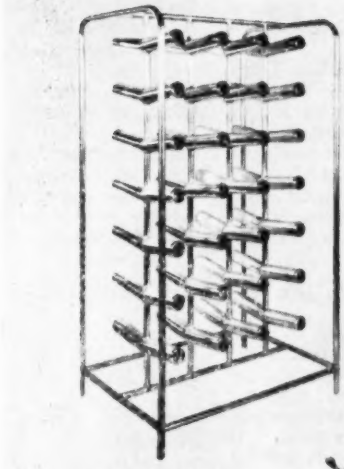
Marshall & Williams Sales Corp., Greenville, S. C., has been formed to supply finishing equipment for textile plants in eleven Southern states. The new company will be under the direction of Fred H. Land, president and treasurer. The company will distribute all finishing equipment produced by James Hunter Machine Co., in addition to the standard line of Marshall & Williams Products, including the new Dungler overfeed tenter clip.

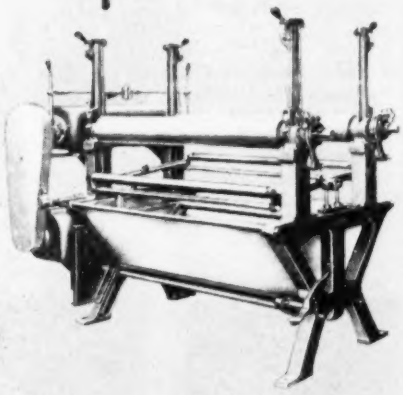
Masury-Young Co., Boston, Mass., has appointed Francis R. Rody sales manager of its Textile Oil Div. to succeed the late Harry L. Drew.

Minnesota Mining & Mfg. Co., St. Paul, Minn., has announced acquisition of American Lava Corp., Chattanooga,

step up..... Quality—Production and Profits

step down.. Lost Time—Materials





More and more, manufacturers of machines for the textile industry are selecting Carpenter stainless tubing for parts.

That's because they have found that Carpenter stainless gives textile men extra advantages. It is light, permits top-speed machine operation. It is strong, stands up to years of service and mishandling. It is super-smooth, won't snag even fine nylon monofilaments. It is corrosion resistant, rust-proof, can't stain or spoil fabrics. It is pit-free, easy to clean and keep clean.

More, Carpenter always delivers exactly to specifications of dimension, tolerance, analysis, temper. And Carpenter customers know that ease of working and fabrication is assured in every length of every order.

When next you need stainless tubing, call Carpenter. We'll give you prompt action delivery, and be glad to give you any engineering or design assistance you may want.

The Carpenter Steel Company, Alloy Tube Division, Union, N.J.

Branch Offices: Atlanta Chicago Pittsburgh Houston Newark San Francisco

Export Dept.: The Carpenter Steel Co., Port Washington, N.Y. "CARSTEELCO"

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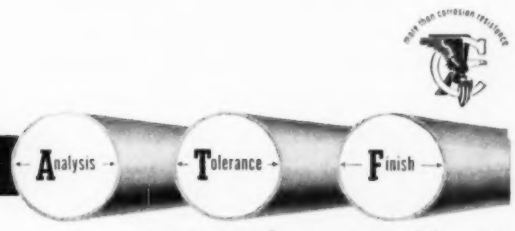
STAINLESS TUBING & PIPE



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TEXTILE
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Productimeters meet every need of the mill man in providing accurate production records. They eliminate losses . . . help maintain maximum production . . . supply accurate basis for wage payment.

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Cotton yarns, single and ply
Carded and Combed
Cotton warps, single and ply
Colored yarns and warps
Spun rayon—yarns and warps

News About SUPPLIERS (Continued)

Tenn., through a $5,000,000 stock transfer. Herbert P. Buetow, 3M president, and John Kruesi, president of American Lava, said officers of the two firms have approved a deal by which the Chattanooga firm would become a wholly owned 3M subsidiary.

The National Drying Machinery Co., Philadelphia, Pa., has appointed Jones & Hunt, Inc., as its sales representative in the New England territory. B. M. Jones, head of the Jones & Hunt organization, was recently general sales manager of Rodney Hunt Machine Co.

Samuel Pegg & Son, Leicester, England, has announced an agreement with Mr. B. Steverlynck of Courtrai, Belgium, for an exclusive license to build in Great Britain and Eire machines incorporating the Steverlynck patented static-pressure system, with world selling rights for the dyeing machines.

Roberts Co., Sanford, N. C., has elected Ward H. Bushee, of Greenville, S. C., a vice president.

Rodney Hunt Machine Co., Orange, Mass., has announced the resignation of Lawrence B. Hunt, who has been a New England field salesman.

Morris Speizman Co., Inc., has promoted G. E. Hart to sales and service engineer. He will work out of the Charlotte headquarters and cover the Eastern part of the United States.

Westinghouse Electric Corp., East Pittsburgh, Pa., has promoted C. P. Walker, headquarters representative for textile-industry sales, to the position of manager of the general-industry section at the East Pittsburgh Works.

CHEMICAL & YARN SUPPLIERS

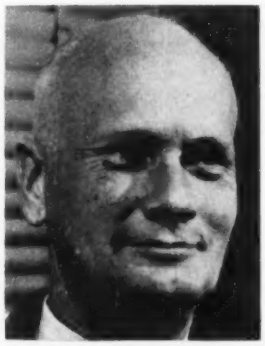
Allied Chemical & Dye Corp., General Chemical Div., New York, N. Y., has announced the second major expansion in its sulfuric-acid production facilities with plans to build a large new plant at Painesville, Ohio.

American Cyanamid Co., Calco Chemical Div., Bound Brook, N. J., has made Cameron Mackenzie branch manager, Dyestuff Dept., of the Boston district office, and Robert P. Wood branch manager of the Providence district office.

American Polymer Corp., Peabody, Mass., has appointed Morell Marean sales manager.

American Viscose Corp., Philadelphia, Pa., has announced the resignation of John Reid, head of the acetate sales division of the Charlotte, N. C., office. James E. Obetz has been employed as a project chemist at the Lewiston, Pa., rayon plant.

Arnold, Hoffman & Co. Inc., Providence, R. I., has made Bertram J. Garceau assistant research director.



JOHN H. HILLDRING, former Assistant Secretary of State, has been made senior vice president of General Aniline & Film Corp., New York, N. Y.

WILLIAM H. CHASE, director of advertising for Draper Corp., Hopedale, Mass., has retired. Mr. Chase was first employed by Draper in 1904.

News About **SUPPLIERS** (Continued)

Carbide & Carbon Chemicals Co., Div., Union Carbide & Carbon Corp., New York, N. Y., recently appointed Carl A. Setterstrom general manager of the Textile Fibers Dept. Arthur L. Snyder has been made sales manager of the department to succeed Mr. Setterstrom. John Conway has been made an assistant sales manager for industrial chemicals. R. E. Daley has been made manager of the company's Consumer Products Dept.

J. ROBERT POTTER has been made vice president of Lockwood Greene Engineers, Inc., Boston, Mass.

Celanese Corp. of America, New York, N. Y., has purchased Marco Chemicals Inc., Linden, N. J. Celanese also has begun production of a new ribbon-like acetate staple fiber of 35 den. per filament for blending in yarns going into heavy fabrics such as suitings and home furnishings.

Chemstrand Corp., Decatur, Ala., recently promoted Dr. Kenneth Johnson and Walter T. Cline, Jr., and appointed John B. Cole to new supervisory positions at Chemstrand's nylon-manufacturing and processing center now under construction near Pensacola, Fla. Dr. Johnson was named area superintendent of polymer and spinning operations, and Mr. Cline was promoted to Dr. Johnson's former position as area superintendent of textile operations. Mr. Cole in turn replaced Mr. Cline as supervisor of the drawtwist area.

Crown Chemical Corp., Providence, R. I., has appointed C. Kerns Batson Southern sales and technical representative. Mr. Batson will cover South Carolina, Georgia, Alabama, and Tennessee from his headquarters in Greenville, S. C.

Diamond Alkali Co., Cleveland, Ohio, has promoted Henry S. Curtis to manager of production and engineering of the Organic Chemicals Div.

General Dyestuff Corp., New York, N. Y. recently promoted J. Robert Bonnar to sales manager, Dyestuff Div., Henry F. Herrmann to general market manager, Dyestuff Div., and Donald E. Marnon to manager, Dyestuff Technical Dept.

Interchemical Corp., New York, N. Y., has announced the establishment of a commercial research department. The new organization will consolidate activities carried on informally in the past by other departments and will be staffed by a group with broad experience in company problems.

Kali Mfg. Co., Philadelphia, has named A. R. Hoover, III, Concord, N. C., as Southern representative.

Onyx Oil & Chemical Co., Jersey City, N. J., has made Samuel O. Rose Southern sales representative to the full-fashioned and circular-knit hosiery and hosiery-yarn dyeing industries in the Piedmont section.

Pennsylvania Salt Mfg. Co., Philadelphia, Pa., has announced that Harry G. Smolens has joined its Technical Service Dept. as customer consultant on bleaching, especially on the use of hydrogen peroxide.

Pittsburgh Plate Glass Co., Pittsburgh, Pa., has appointed John H. Clark sales representative of the New York district sales office of the Fiber Glass Div.

Rohm & Haas Co., Philadelphia, Pa., has recently completed and put into operation a new plant for the production of acrylic monomers, raw materials used in the manufacture of the company's products. The new plant represents a second $8,000,000 addition to the company's petrochemical operations at Deer Park, near Houston, Tex. An entirely new proc-

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EMPIRE MILL CRAYON
JUNIOR MILL CRAYON
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Millions of these very special Crayons are turned out each year . . . The result of more careful research and study, they meet and better the exacting requirements of the Textile manufacturer.
Don't compromise with quality — Get the BEST — Get EMPIRE Textile Mill Crayons!
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For Maintained Shrinkage-Perfect Finish—Long Life

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BLANKETS

for use in shrinking fabrics to the *"Sanforized"* standard by the compressive shrinking process, are daily meeting the most exacting requirements of finishers throughout the industry. From the lightest and finest fabric to the heaviest denim, there is a special Huyck blanket to meet your specific needs.

Huyck blankets retain high shrinkage and finish properties to the last.

***PALMER BLANKETS*—also available for your special requirements.**

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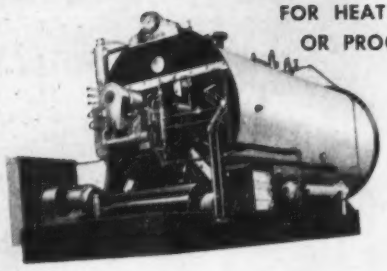
STEAM

FOR HEAT
OR PROCESS



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Superior Steam Generators are manufactured in 18 sizes from 20 to 600 b.h.p. for pressures up to 250 p.s.i. or for hot water heating.

For complete details, write for Catalog 518

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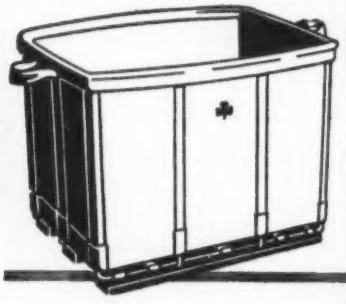
SUPERIOR STEAM GENERATORS



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CANVAS BASKETS, HAMPERS, TRUCKS
Many styles and sizes. Also special sizes and shapes to meet your need.

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MEESE, INC.
Main Office & Plant
MADISON, INDIANA
Phone 261 or 262

News About SUPPLIERS (Continued)

ess, which employs as its raw materials acetylene, carbon monoxide, and various alcohols, is being used.

Pittsburgh Coke & Chemical Co., Pittsburgh, Pa., recently appointed Ernest A. Zillessen as sales representative for its Fine Chemicals Div. in northern New Jersey and in parts of North Carolina.

Sandoz Chemical Works, Inc., New York, N. Y., recently held a housewarming at its new New England office in Hudson, Mass.

Standard Chemical Products, Inc., Hoboken, N. J., recently announced it will erect a 50,000-sq.-ft. textile-chemical plant in Charlotte, N. C., at a cost of over $500,000.

A. M. Tenney Associates, Inc., New York, N. Y., has announced that Robert B. Cook has been assigned to the New England territory and will join Ray W. Greene in Providence, R. I., who is in charge of Eastman fiber sales there.

Universal Detergents, Inc., Long Beach, Cal., recently appointed F. H. Guernsey its Eastern-district sales manager. He will continue to make his headquarters in New York City.

GEORGE H. HOTTE will become manager of synthetic-fiber sales, National Aniline Div., Allied Chemical & Dye Corp., on Sept. 1. Mr. Hotte has been technical director of A. M. Tenney Associates, Inc.

Union Carbide and Carbon Corp., New York, N. Y., has made John Conway an assistant sales manager for industrial chemicals of Carbide and Carbon Chemicals Co. R. E. Daley has been made manager of the Consumer Products Dept.

OTHER SERVICES

Fessenden Blanchard & Morrell, New York, N. Y., has appointed Douglas G. Woolf, Altadena, Calif, former editor of TEXTILE WORLD, as its consulting associate on the Pacific Coast.

Lowell Technological Institute, Lowell, Mass., has announced that Elmer Ward, president of Goodall-Sanford and the Palm Beach Co., has accepted appointment to its Textile Advisory Committee.

ANSON B. NIXON has been made chairman of the board of Hercules Powder Co. to replace Charles A. Higgins, who remains a board member.

Chas. T. Main, Inc., Boston, Mass., has taken over the business of John A. Stevens, Inc., Engineers, Lowell, Mass.

N. C. State College, Raleigh, N. C.—A scholarship to be awarded to a senior-year student at the School of Textiles has been established by American Viscose Corp., Marcus Hook, Pa. The scholarship has a value of $500 and will be awarded to a student to be selected by the school scholarship committee.

Primary Textiles Institute, Toronto, Canada, has announced that Cyril F. Woodward of St. Catharines, Ont., has been appointed president and George H. Carr of Sherbrooke, Que., has been appointed vice president.

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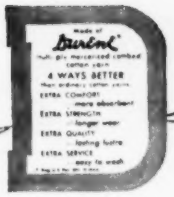

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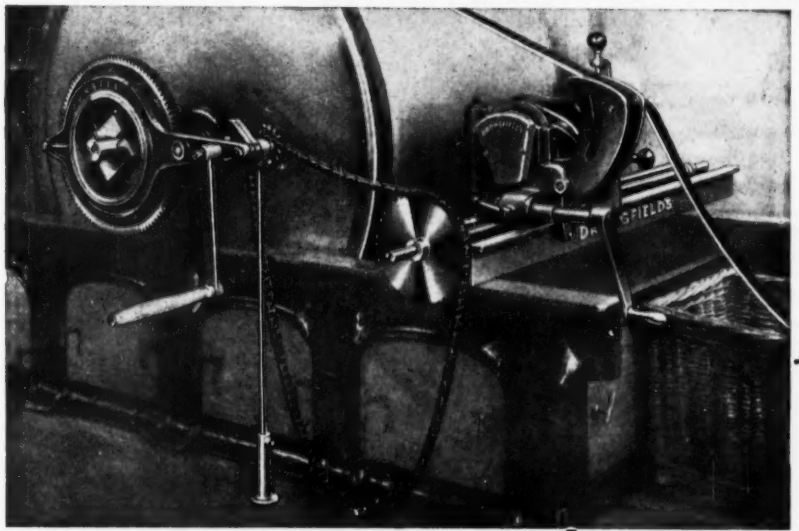

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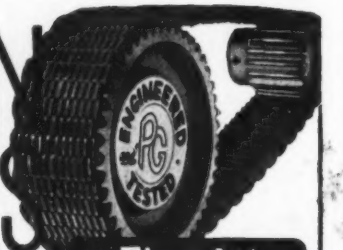

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NEWS ABOUT Mills

COTTON MILLS

Abney Mills, Inc., Greenwood, S. C., has purchased working control of Erwin Mills. This stock purchase is said to be an investment with no plan for merger or consolidation.

Bates Mfg. Co., York Div., Saco, Maine, now has 7,200 spindles of Saco-Lowell's SG-1 frames in operation. New complementary machinery has also been installed. At the Lewiston Div. one Gwaltney frame of 240 spindles has been installed.

Beaumont Mills, Spartanburg, S. C., will install 120 new 60-in. Draper XP looms in the No. 5 weave room of Mill No. 1.

Belrug Mills will erect a one-story plant at Greenville, S. C., to weave cotton carpets. New equipment will be installed. Daniel Construction Co., Greenville, is the contractor.

Sidney Blumenthal & Co., Inc., Shelton, Conn., has purchased all the productive machinery of Shepperd Mills, Inc., Manayunk, Pa. The machinery will be moved to the Blumenthal plant at Wilson, N. C.

Cabin Crafts, Inc., Dalton, Ga., has plans under way for an expansion program. Bids will soon be asked. Robert & Co. Associates, Inc., Atlanta, Ga., is the architect and engineer.

Huntsville Mfg. Co., Huntsville, Ala., is constructing a new $192,000 building as the first step in its expansion program. New machinery will be installed. Daniel Construction Co., Birmingham, is in charge of the project. C. W. Jones & Sons, Huntsville, is consulting engineer.

International Looms, Inc., New York, N. Y., has erected a 15,000-sq.-ft. addition adjoining its Gwen Evan Mills, Clinton, S. C. The building will house facilities for increased production.

Jefferson Mills, Inc., Jefferson, Ga., has completed a modernization project that included the installation of new equipment for high-quality production throughout the mill. The program included rebuilding floors and installing air conditioning.

Lowell Mills, Cleveland, Ga., will erect a new plant at Cleveland that will cost $2,000,000. McPherson Co., Greenville, S. C., is the architect.

Mohawk Carpet Mills, Inc., has acquired the cotton-tufted carpet manufacturing facilities of Scotland Mills, Inc., Laurinburg, N. C.

National Automotive Fibres Inc., Detroit, Mich., is constructing an addition to its newly completed plant at Ajax, Ont., at a cost of $300,000. The addition will provide 34,000 sq. ft. of floor space.

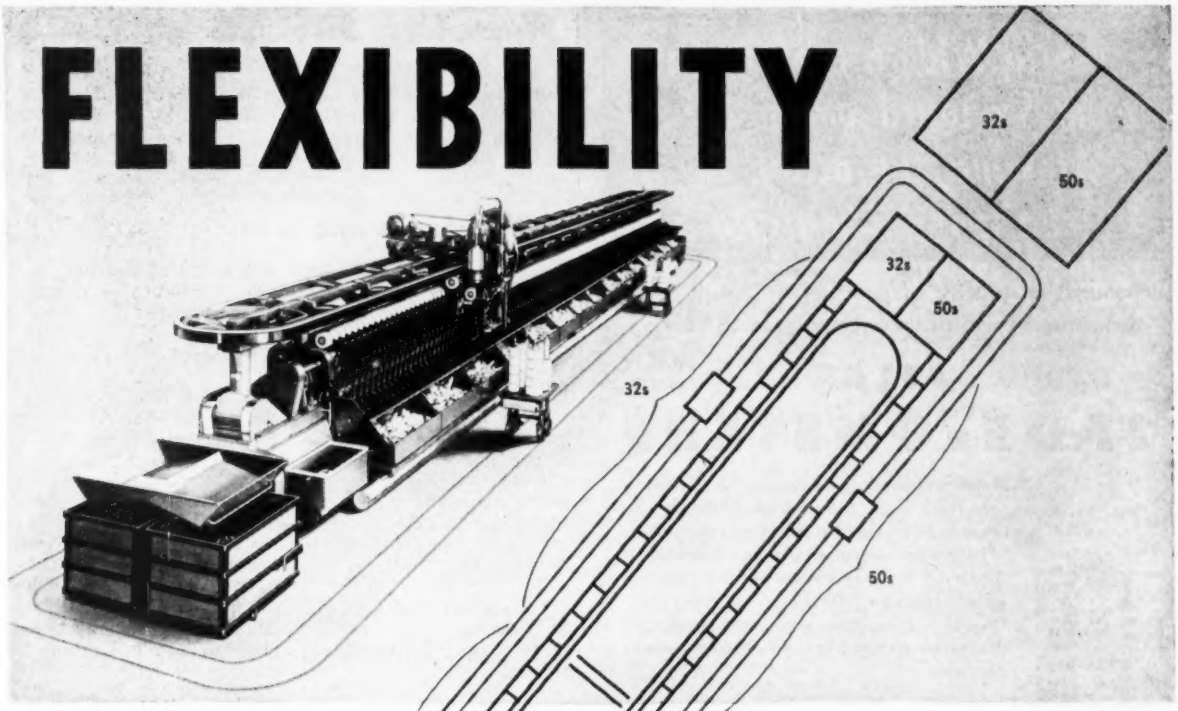
Peerless Spinning Co., Lowell, N. C., is constructing an addition to be used as a picker room. The building will be 25x100 ft.

Alexander Smith, Inc., Yonkers, N. Y., will use the carpet-making facilities of the Barwick Mill, Dalton, Ga., to produce a cotton-broadloom line. Barwick recently completed a new carpet mill in Lafayette, Ga., where it has concentrated its carpet production.

Smitherman Cotton Mills, Troy, N. C.—Leon Salkind, president of this mill and also president of Allied Embroidery Corp., New Bedford, Mass., and New York, N. Y., has purchased all of the Kilburn Mill property, New Bedford, except the Mill No. 1.

Springs Cotton Mills, Chester, N. C., is erecting a $100,000, two-story addition, 100x80 ft.

FLEXIBILITY



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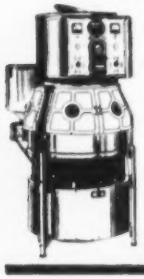

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News About **MILLS** (Continued)

Trenton Cotton Mills, Gastonia, N. C., plans to erect an $18,000, 50x120-ft. addition to its mill.

Wamsutta Mills, New Bedford, Mass., has acquired all the capital stock of Somerset Mills, Inc., Roxboro, N. C.

WOOLEN AND WORSTED MILLS

Abbott Worsted Co. has begun operations at its new $2,000,000 plant in Seneca, S. C. Nat Matthews, Jr., is the plant superintendent, and John P. Bell is the plant manager.

Ames Textile Corp., Lowell, Mass., plans to construct a $2,000,000 woolen mill at Cleveland, Ga. Construction will start soon and will be completed early in 1954. McPherson Co., Greenville, S. C., is the engineer.

Canada Hair Cloth Co. Ltd., St. Catharines, Ont., has installed a new high-speed Ruti automatic loom.

Dominion Woolens & Worsteds Ltd., Hespler, Ont., has transferred its general offices from Toronto to Hespler. The hand-knitting yarn plant at Orillia, Ont., will also be transferred to the Hespler mill.

Fairfield & Sons Ltd., Winnipeg, Man., has acquired Geo. Pattinson & Co. Ltd., Preston, Ont. New officers of the Pattinson division are: president, H. C. Fairfield; vice president, J. G. Fairfield; secretary-treasurer, H. J. Fairfield.

Hightstown Rug Co., Hightstown, N. J., plans to construct a new mill for the production of velvet rugs and carpetings. It is estimated that the plant and equipment will cost approximately $2,250,000.

National Spinning Co., New York, N. Y., is planning to build a new plant at Washington, N. C. Wm. F. Freeman Engineers, High Point, N. C., is the consulting engineer.

Frank S. Nelson & Co., Inc., Manayunk, Philadelphia, Pa., has awarded the general contract to Steele, Pownall & Gebhardt, of Philadelphia, for the construction of a $50,000 addition to its wool carpet-yarn plant. William F. Gebhardt is the engineer.

Palmetto Worsted Mill, Laurens, S. C., is constructing an addition that will double the plant. New machinery, estimated to cost $75,000, will be installed in both the new and present buildings.

Porritts & Spencer (Canada) Ltd., Hamilton, Ont., has let the contract for the construction of additional washroom facilities in the plant.

Alexander Smith, Inc., Yonkers, N. Y., plans to construct a new dyehouse at the mill. It is reported to cost about $200,000. This is part of a general expansion and modernization program now being carried out.

SYNTHETICS MILLS

Clarkesville Mills, Clarkesville, Ga., a division of United Merchants & Manufacturers, Inc., has asked bids on the erection of an addition to its rayon mill. The addition will cost about $150,000. Robert & Co. Associates, Atlanta, Ga., is the architect.

Deering, Milliken & Co., Greenville, S. C., is planning to build a mill addition that will cost about $125,000.

Goodall-Sanford, Inc., Asheville, N. C., has awarded Perry M. Alexander Construction Co. the contract for grading and excavation work for an $800,000 plant to be erected at Hot Springs, N. C. Goodall expects the plant to be in operation by the spring of 1954.

Southern Pile Fabric Co. and **Brookline Fabrics, Inc.**, Greenville, S. C., have merged under the name of Brookline Fabrics, Inc. G. A. Buckly is president, and F. D. Brosman is plant manager and comptroller.

Verney Corp., Manchester, N. H., has acquired a 2,300-acre tract at Richmond Hill, Ga., and is planning to erect a rayon spinning and weaving plant there. It is expected to cost about $1,000,000.

News About **MILLS** (Continued)

KNITTING MILLS

Atwater Hosiery Mills, Yanceyville, N. C.—Roy V. Atwater has sold his interest in Atwater Hosiery Mills and resigned as president. David R. Johnson has been elected president, and William B. Atwater has been named first vice president.

Avalon Hosiery Ltd., Montreal, Que., has begun work on a one-story extension to its plant and offices.

Black Mountain Hosiery Mill, Black Mountain, N. C., is erecting a mill addition that will cost $84,000.

Burlington Mills Hosiery of Canada Ltd., Montreal, Que., is a subsidiary of Burlington Mills Corp., Greensboro, N. C., and not Dominion Textiles Ltd., Montreal, as was reported last month.

J. L. Burn, Madisonville, Tenn., and his son, W. K. Burn, have leased the former Monroe County Fair Administration Bldg. and plan to establish a hosiery knitting mill there.

Coopers, Inc., Millen, Ga., has a $150,000 expansion program under way for knitting and bleaching operations.

Dexdale Hosiery Co., Lansdale, Pa., has installed a Wildman full-fashioned hosiery machine for the production of 75-gauge goods.

Grantville Mills, Grantville, Ga., has begun the construction of an addition to be used for warehouse service. The general contractor is McBride Construction Co., Newman, Ga. Robert & Co. Associates, Inc., Atlanta, Ga., is the architect and engineer.

Holeproof Hosiery Co. of Canada Ltd., London, Ont., is nearing completion of a one-story steel-and-concrete addition to its plant. It will house the company's Luxite Div.

Integral Overseas Ltd., W. Toronto, Ont., has made alterations to its plant at 14 Verral Ave., Toronto.

Jermar Knitting Mills, Philadelphia, Pa., recently began the production of knitted outerwear. Myer Cohen, formerly of Dorco Knitting Mills, is the proprietor.

Jonson Sales Corp., Philadelphia, Pa., has been incorporated as a subsidiary of Mar-Rene Hosiery Co. Both are owned by Samuel Margolies.

Kennebec Knitting Mills Ltd., Pintendre, Que., is constructing a knitting mill in St. Romauld, Levis County, Quebec, at a cost of approximately $75,000. The mill will be one story, 75x150 ft., of concrete-block-and-brick construction. The general contractor is Andre Dutil, St. Romauld, Que.

Kramer Bros., Philadelphia, Pa., and Anaheim, Calif., plans to build a new mill at High Point, N. C.

Largman, Gray Co., Philadelphia, Pa., has moved the executive offices, finishing plant, and shipping, receiving, and stock departments to new quarters at 3219 B St. The firm's 51-, 54-, 60-, and 66-gauge full-fashioned knitting machinery will be housed in its new building in East Greenville, Pa.

Model Knitting Mills Ltd., Toronto, Ont., has ordered a new machine for knitting circular jersey capable of 144 courses per minute.

Old Colony Knitting Mills, Hingham, Mass., is erecting a modern 15,000-sq. ft. plant at Laconia, N. H.

Progressive Knitting Mills, Philadelphia, Pa., has increased its production facilities as part of an over-all expansion program.

Skyland Textiles Corp., Sylvia, N. C., has started its training program in preparation for the opening of its children's knitwear plant in the fall. Over-all expenditure for the plant, including equipment, will be about $400,000.

Tony Day Sweaters Ltd., Kitchener, Ont., is erecting a plant on Regina St., Waterloo. Robert Protchard is the president. The cost is estimated at $60,000.

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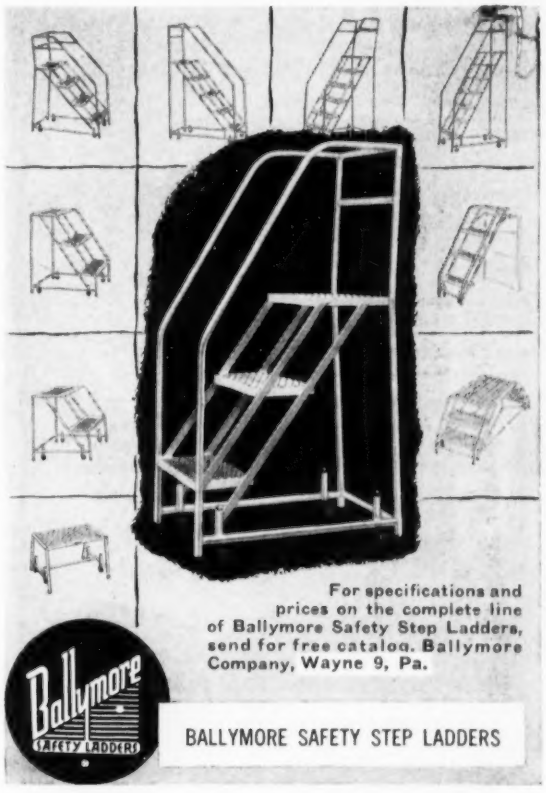

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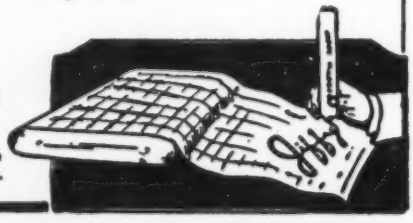

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(TEAR OUT AND MAIL)

News About **MILLS** (Continued)

Point, N. C., has leased the former Guilford Hosiery Mills on Grimes St. and will consolidate its knitting, looping, and inspection operations there. Triangle's present plant, also on Grimes St., will house both the finishing and shipping departments, as well as company offices.

DYEING & FINISHING PLANTS

American Waterproofing Corp., New Haven, Mo., has begun operations on treating canvas at its new finishing plant.

Clover Spinning Mills, Clover, S. C., will erect a new bleachery and dye plant at Jefferson, S. C., for cotton and synthetic yarns and knitted fabrics.

Craftsmen Finishers, Inc., Concord, N. C., a new hosiery-finishing company, will begin operations soon. Officers are: M. W. Nixon, president; Harold T. Summer, Gastonia, N. C., vice president; W. C. Penrifoy, Jr., secretary; and Fred W. Suther, treasurer.

Cranston Print Works, Cranston, R. I., has been granted a permit for a new plant addition costing $9,000.

Duffen Dye Works plans an addition to its plant at Portsmouth, Va.

Dye Masters, Inc., Inglewood, Calif., is installing new equipment to accommodate its expanded operations.

Geltman Sponging Co., Woonsocket, R. I., is adding 70,000 sq. ft. to its manufacturing space.

Grace Bleachery, Springs Cotton Mills, Grace, S. C., is constructing an 800x730-ft. brick building. Bleaching ranges and dyeing machines to be installed will have a capacity of over 10,000,000 yds. per week. The cost of building and machinery is estimated at $2,000,000. Construction will be undertaken by Springs Engineering Dept. Completion is expected about February of next year.

Mayfair Hosiery Finishing Co., Philadelphia, Pa., has been acquired by Louis Kazer, formerly of Allegheny Hosiery Finishing Co. Allegheny equipment has been moved to the Mayfair plant. William Richards, former owner of Mayfair, has retired from the industry.

Pacific Mills, Lyman, S. C., has completed a new addition and installed machinery for the production of Everglaze fabrics.

Richmond Piece Dye Works, Inc., Richmond, Va., is installing new machinery as part of a general expansion program. Charles P. Weber, general plant manager, George L. George, assistant plant manager, and George Haeberlin, plant engineer, are in charge of the project.

Union Bleachery, Greenville, S. C., is installing an air-operated rotating bridge to connect its new No. 4 warehouse with the gray room.

MISCELLANEOUS MILLS

Caldwell Linen Mills, Iroquois, Ont., is planning to construct an addition to its existing mill.

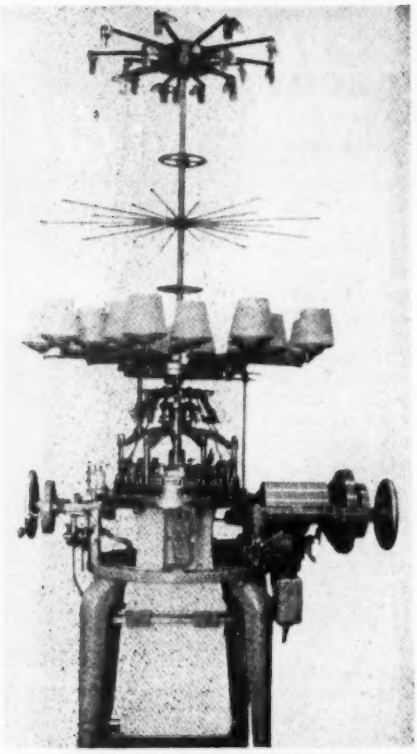
Chester Lace Mills, Chester, Pa., has been sold to Irving L. Kutcher and a group of Philadelphia associates.

National Textiles Corp., Montreal, Que., is planning to construct a warehouse on Iberville St., Montreal. Architects are Luke & Little, Montreal.

Ro-Art Linen Co., Gaffney, S. C., has let the contract to Sossamon Construction Co., Gaffney, for a new plant at a cost of $100,000.

Tennessee Textile Corp., Maryville, Tenn., will occupy a new one-story mill under a long-term lease. The building is to be constructed by the local Chamber of Commerce. Lindsey & Maples, Maryville, is the architect.

Textile Mfg. Co. Ltd., Toronto, Ont., plans to construct a second-floor addition. Gordon Baxeley, Forest Hill, Ont., is the architect.



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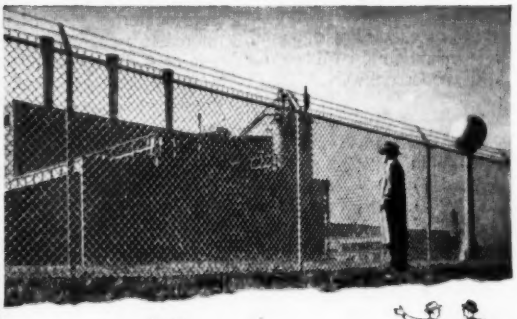

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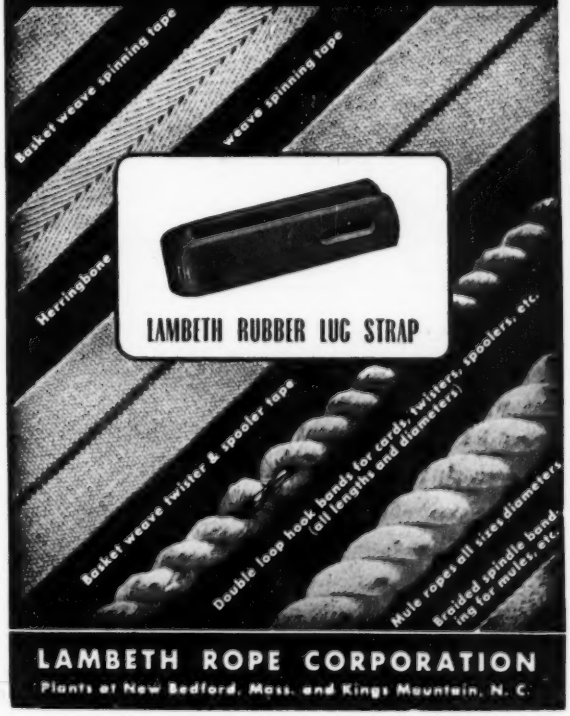
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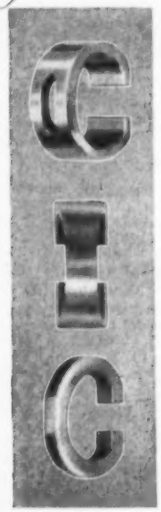

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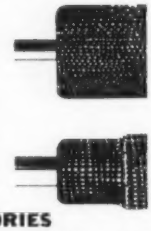

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NEWS ABOUT *Men*

E. F. Adams has been named to the board of directors of Chatelaine Hosiery Ltd., St. Johns, Que., Canada.

Everett Bailey has been named overseer of carding at Sawyer Regan Co., Dalton, Mass., succeeding **David Sawtelle.** Mr. Sawtelle has accepted a similar position with Kenwood Mills, Cavendish, Vt. **Joseph Nedroscik** has been named overseer of dyeing with Sawyer Regan, succeeding **Ritchie Buchanan.** Mr. Buchanan has resigned to accept a position with Lee Dyeing Co., Johnstown, N. Y.

Eugene W. Bean has been named overseer of weaving at Homestead Woolen Mills, West Swazey, N. H. Mr. Bean succeeds **Norris Emery** who has resigned.

T. Edmund Beck has been elected a member of the board of Robbins Mills, Inc., New York, N. Y. He succeeds **George Saylor,** who is retiring.

Randolph Boaze is now in charge of all carding and spinning operations of Mooresville Mills, Mooresville, N. C.

James Bolton has been elected chairman of the board of Gosnold Mills Corp., New Bedford, Mass. **George Jackson** has been elected president, and **Louis F. Fayne,** executive vice president and general manager.

Edward Bradford has been appointed manager of High Rock Mills, Inc., Philmont, N. Y.

Norman Byron has resigned as cloth superintendent at Atlantic Mills of A. D. Juilliard & Co., Inc., Providence, R. I. He has been succeeded by **Clarence Leach,** former resident manager of Arden Mills, Fitchburg, Mass. **W. D. Rochan,** former dyer at Arden Mills, has been named overseer of dyeing at Atlantic Mills.

G. Wyman Carroll, Jr., has resigned as treasurer of United States Finishing Co., Norwich, Conn.

MILTON E. McCROSSON has been named industrial fabrics sales manager for Cheney Bros., S. Manchester, Conn. He was formerly president and manager of Rocky Mount Rayon Mills, Rocky Mount, N. C.

James L. Catchins, formerly overseer in the card room of Plant No. 1, Callaway Mills, LaGrange, Ga., has been promoted to assistant superintendent of Callaway's Unity Spinning Mills. **Jack Market** has been named overseer.

Robert E. Coleman has been promoted to assistant superintendent of Anchor Rome Mills, Rome, Ga.

W. A. Critchley has been named secretary-treasurer of Spinrite Yarns & Dyers Ltd., Listowel, Ont.

A. B. Davis, Jr., has been named overseer of dyeing at Swift River Woolen Co., Westerly, R. I.

Ralph L. Donnelly has been appointed general superintendent at the Mascoma Mills of American Woolen Co., Lebanon, N. H. **Wilfred M. Emery** has been named overseer of weaving and dressing, succeeding **Eugene Dean.**

Roland Eicharn has been named overseer of dyeing and finishing at Stanrich Mills Corp., North Oxford, Mass.

News About **MEN** (Continued)

George C. Elmes has been appointed assistant manager of Heller Knitting Mills, Woonsocket, R. I. George Steere has been named superintendent of the spinning division.

Morton H. Engel and **Addis Keller** have been elected assistant vice presidents of M. Lowenstein & Sons, New York.

Rankin G. Fox, Jr., has been named general manager of the branch offices of American Thread Co. located at New York, Boston, Philadelphia, Dallas, Chicago, St. Louis, San Francisco, and Los Angeles.

Paul Fabian, has been elected president and general manager of Greenwich Printing & Dyeing Co., East Greenwich, R. I. **A. T. Smith**, former president and general manager, has been elected chairman of the board.

F. H. Feldman has been named superintendent of Pachaug Mills, Inc., Norwich, Conn., succeeding **Joseph Suprenant.**

Harry Gallimore, Jr., has been named manager of the Huntersville, N. C., plant of Carolina Mills, Inc.

J. M. Gayle is now manager of Gastonia Weaving Co., Gastonia, N. C.

Julius B. Goldberg has resigned as research director of J. P. Stevens & Co., Inc., New York, N. Y., to establish his own textile-consultant firm in New York.

Herman E. Goodman has resigned as chairman of the board of Robbins Mills, New York, N. Y. He has been succeeded by **Karl Robbins.**

James D. Grealish has been elected executive vice president of Sarfert Hosiery Mills, Inc., Philadelphia, Pa., a division of Burlington Mills.

J. D. Green has resigned as manager of the Kershaw Plant of Springs Cotton Mills, Kershaw, S. C., to accept a position as general manager of the yarn mills of P. H. Hanes Knitting Co., Winston-Salem, N. C. **H. W. Bagwell** succeeds Mr. Green at Kershaw.

Stanley M. Herlin has been named president and general manager of Ripon Knitting Works, Ripon, Wis. **Walter C. Merigold**, acting president, has been named vice president and general manager of Portage Hosiery Co., a subsidiary.

Herbert C. House, president of Chas W. House & Sons, Unionville, Conn., has been made chairman of the board. **Raymond K. Brooks** succeeds him as president. **J. Gordon Brash** is now vice president as well as secretary. **Allen C. House** and **R. King Brooks, Jr.**, were elected directors.

Edward P. Ix has been elected president and treasurer of Frank Ix & Sons, Charlottesville, Va., and related corporations. He succeeds his brother, the late **Alexander F. Ix.**

Mark T. Kelly has been promoted to superintendent of the Norwich Mills of American Woolen Co., Norwich, Conn. **Fred Allen** has resigned as overseer of dyeing on the second shift and has been succeeded by **John M. Sweeney. Alfred Kelly** has succeeded **Norman Hunil** as overseer of dyeing on the first shift. **Alfred Jouvet** has succeeded **Frank Hurt** as overseer of spinning.

E. F. King has been appointed a director of Dominion Textile Co. Ltd., Montreal, Que., Canada.

David Lindsay has retired as plant manager of Spinners Processing Co., Spindale, N. C. He will continue as secretary-treasurer and a director. **John Neely** has been named to succeed Mr. Lindsay.

Quinton D. Lord has been promoted to night superintendent at Valley Woolen Mills, Inc., Homer, N. Y.

E. H. Luddecke has resigned as overseer of finishing at Yantic Woolen Mills, Inc., Yantic, Conn. He has been succeeded by **George Lodge.**

A. C. McEwen has been appointed general manager of North Star Woolen Mill Co., Lima, Ohio, succeeding **H. C. Waterhouse.** Mr. McEwen was formerly superintendent of Packard Mills, Webster, Mass.

W. H. Muse has retired as assistant manager of Erwin Mills, Inc., Erwin, N. C.

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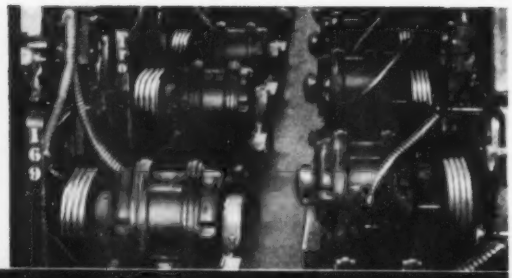

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***13* ISSUES OF**

TEXTILE WORLD

BEGINNING THIS YEAR!

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See Page 231 For Details

News About **MEN**

(Continued)

Alex Nicholson has been named overseer of dyeing at Gloversville Knitting Co., Gloversville, N. Y.

John D. Paddon has been appointed vice president of Canadian Cottons Ltd., Montreal, Que. Mr. Paddon will be in charge of all phases of production, including industrial relations.

C. C. Page has been named plant superintendent and general manager for the newly formed True Loom Mfg. Co., Inc., Carrollton, Ga.

W. B. Perrin has been promoted to vice president of Abney Mills, Anderson, S. C. **Carl Ziegler** has been promoted to assistant general manager. **Calvin McCombs** has been named assistant general manager of the Belton, Anderson, and Cortenay plants. **E. D. Crosby** has been made superintendent at the Belton plant.

Frank Poore has been named head of the warping, winding, quilting, and twisting departments at Mooresville Mills, Mooresville, N. C.

Dennis Rainville has been named overseer of finishing at Bachmann Uxbridge Worsted Corp., Uxbridge, Mass.

Cornelius S. Reilly has resigned as superintendent of Dorlexa Dyeing & Finishing Co., Woonsocket, R. I.

Frank Robinson has resigned from Amory Worsted Mills, Inc., Manchester, N. H., to accept a position as overseer at Atkinson Spinning Co., Inc., Manchester, N. H.

M. L. Rogers has retired as plant manager of the Efird Div. of American & Efird Mills, Inc., Albemarle, N. C. His son, **H. Wells Rogers**, will undertake the duties of general superintendent.

I. Rogosin has resigned as president of Beaunit Mills, New York, N. Y., and its subsidiaries and has been elected chairman of the board of each company. His son, **Lionel Rogosin**, has succeeded him as president.

C. Eugene Rowe has resigned as treasurer of Burlington Mills Corp., Greensboro, N. C.

Oscar M. Shaw has been elected a director of Naumkeag Steam Cotton Co., Salem, Mass.

Arthur L. Shook, Jr., has been named assistant superintendent at Dresden Mills, Inc., Dresden, Ohio. **Medrick Henaut** has been named overseer of finishing succeeding **H. Allen.**

Joseph T. Short has been promoted to assistant research engineer of Callaway Mills, LaGrange, Ga.

John Stewart and **Donald R. Belcher** have been elected to the executive committee of Botany Mills, Inc., Passaic, N. J. They succeed **Harry C. Templeton**, executive vice president, and **William Graessle**, vice president.

Frank B. Struzik has been named assistant superintendent of Lees Mfg. Co., Westport, Conn.

JOHN M. PRIVETTE (left) and WILLIAM F. HILL have joined the Quality Control Dept. of Ohio Falls Dye & Finishing Works, Louisville, Ky.

News About **MEN** (Continued)

Ralph Tanner has been named vice president and a director of Mooresville Mills, Mooresville, N. C. **William W. Rader,** assistant treasurer and director, has been named treasurer.

Allan Taylor, formerly superintendent of the Sterling, Conn., mill of United States Finishing Co., has joined Robbins Mills, Clarksville, Va. **Charles Pozzi** has been named superintendent of the Sterling plant to succeed him.

John Wardlaw has been promoted from assistant superintendent of Hatch Mills, Columbus, N. C. to superintendent. He will be succeeded as assistant superintendent by **Robert Branner.**

George C. Wilson has resigned as superintendent of weaving at the Wood Mill of American Woolen Co., Lawrence, Mass. He has been succeeded by **Paul Herring,** weaving overseer on the night shift.

H. Stanley Worthington, vice president of operations for Alexander Smith, Inc., Yonkers, N. Y., and **Frank J. Saidis,** director of manufacturing, have resigned. **Frederick W. Klein,** acting superintendent of the Axminister division of the Yonkers plant, has been named general manager of Yonkers manufacturing. **Thomas Appleyard,** assistant to the director of manufacturing, has been appointed assistant general manager of Yonkers manufacturing.

OBITUARY

Rosario G. Boyer, 60, agent and general superintendent of Atlantic Mills Div., A. D. Juilliard & Co., Providence, R. I.

Richard P. Carlton, 59, former president of Minnesota Mining & Mfg. Co., St. Paul, Minn.

John S. Chaya, head of the yarn processing and weaving division of American Viscose Corp., Textile Research Dept., Marcus Hook, Pa.

Robert Dewey Conrad, 49, supervisor of the spinning department of Cramerton Mills, Cramerton, N. C., a division of Burlington Mills., Inc.

Charles B. Fainer, 70, founder and president of Fainer Knitting Mills Ltd., Montreal, Que.

Isaac C. Glauber, 83, manager of the former National Woolen Co., Cleveland, Ohio.

Walter B. Green, 64, assistant superintendent of Arkwright Mills Corp., Spartanburg, S. C.

Thomas A. Grieve, 68, retired agent of Wyandotte Worsted Co., Pittsfield, Mass. Mr. Grieve had served as a consultant for the mill since his retirement.

Frederick J. Koeth, 65, manager of Baush & Lomb Optical Co., Protective Eyewear Dept., Rochester, N. Y.

Edward P. LeVeen, 73, president of Carleton Woolen Mills, Rochdale, Mass.

Robert K. Marshall, 70, a foreman at Whitin Machine Works, Whitinsville, Mass.

Charles M. Moselle, 58, vice president and sales manager of Onondaga Silk Co., Inc., Easton, Pa.

Ludwig Neumann, president of La Mode Hosiery Corp., Hatfield, Pa.

Karl Reaber, 47, general manager of the Hartwell, Ga., plant of Textron, Inc.

Sumner Simpson, 79, chairman of the board of Raybestos-Manhattan, Inc., Passaic, N. J.

Dr. Ferdinand Sonneborn, 79, founder and president of L. Sonneborn Sons, Inc., New York, N. Y.

Miss Eleanor Starr Taylor, 53, vice president of Chatham Mfg. Co., Elkin, N. C.

Benjamin Westerhoff, 68, treasurer of Wedgewood Mills, Inc., Jewett City, Conn.

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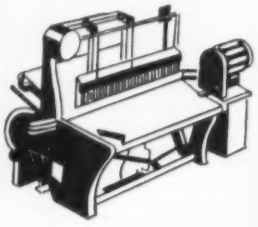

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8/53

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Gerry Ballbearing Lumpers, 44", 20"
Sacco-Lowell (Kitson) B.B. Rag Pickers 18"
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D.&F. 12 Bar, 48" Shredder
Rag Washers, S.S., and Nylon Dippers

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(Continued from opposite page)

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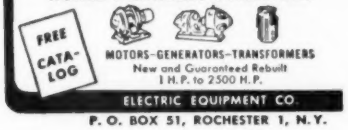

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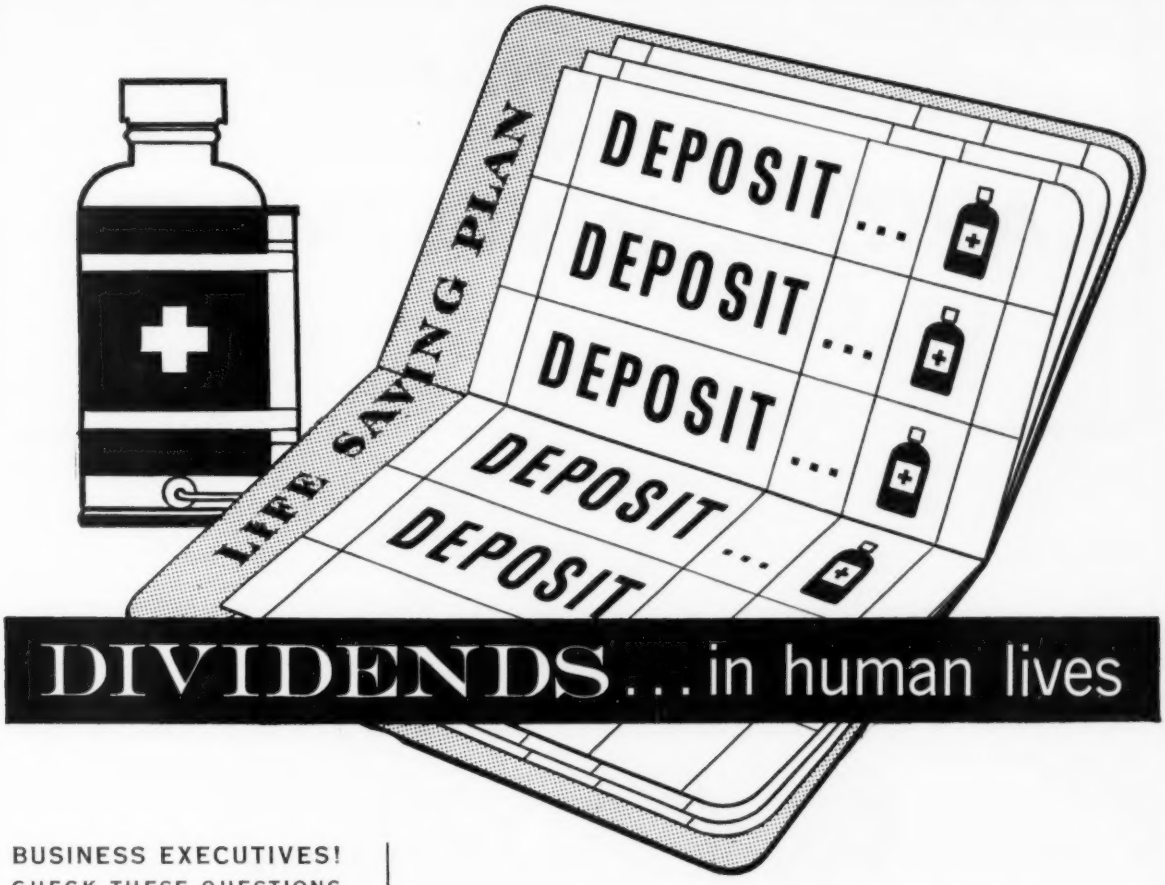

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If you can answer "yes" to most of them, you—and your company—are doing a needed job for the National Blood Program.

- ◯ HAVE YOU GIVEN YOUR EMPLOYEES TIME OFF TO MAKE BLOOD DONATIONS?
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- ◯ DO YOU HAVE A BLOOD DONOR HONOR ROLL IN YOUR COMPANY?
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- ◯ HAVE YOU INFORMED EMPLOYEES OF YOUR COMPANY'S PLAN OF CO-OPERATION?
- ◯ WAS THIS INFORMATION GIVEN THROUGH PLAN BULLETIN OR HOUSE MAGAZINE?
- ◯ HAVE YOU CONDUCTED A DONOR PLEDGE CAMPAIGN IN YOUR COMPANY?
- ◯ HAVE YOU SET UP A LIST OF VOLUNTEERS SO THAT EFFICIENT PLANS CAN BE MADE FOR SCHEDULING DONORS?

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America's blood bank needs **more** blood, **now.** Be a regular depositor and know that your dividend is saving a life of some American—somewhere.

It may be a soldier shot down in battle, suffering from **shock.** Or someone here at home, sick and in dire need of new blood to restore life. A mother in childbirth, or a child in an accident.

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GIVE BLOOD

...give it again and again

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OR
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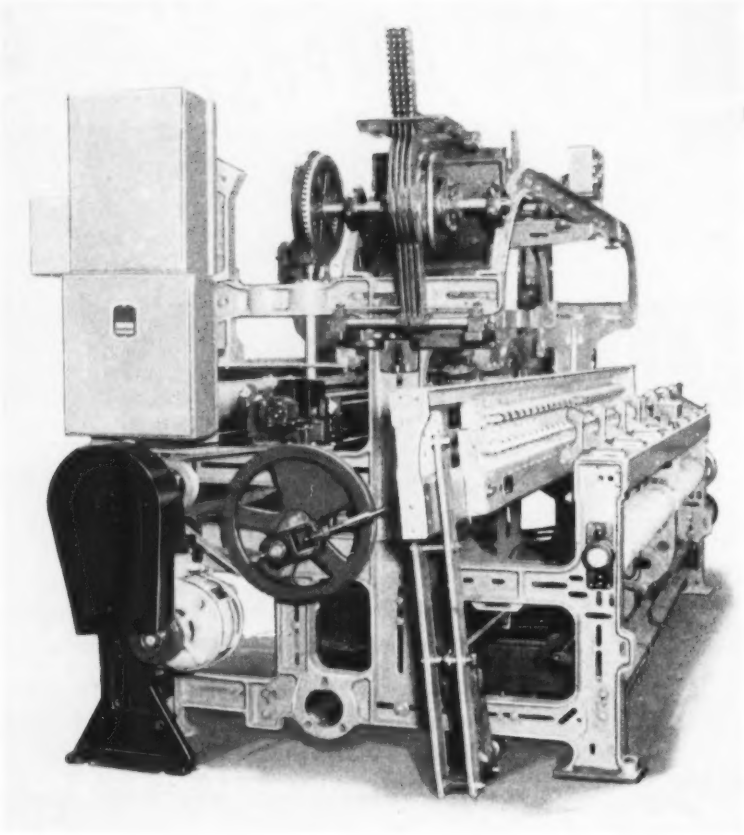

Orders for new equipment indicate that mill management is resolved to keep its lines competitive and its business profitable. Depreciation reserves are a favorite source of funds for this purpose.

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HOW TO USE. First, look in the table below and find the letter that designates the class of supply or service that you currently need. Then consult in the index the page numbers that are followed by that letter.

A. Air Conditioning, Air Cleaning
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D. Cleaning Equipment
E. Dyeing, Finishing, and Cloth-Room Equipment and Supplies
F. Electrical Equipment—Motors, Controls, Lighting, Etc.
G. Fibers, Yarns, Mills, Finishing Companies
H. Fluid Handling.—Compressors, Pumps, Piping, Valves, Fittings
K. Instruments: Measuring, Metering, and Weighing Apparatus
L. Knitting-Mill Equipment and Supplies
M. Lubricants and Lubrication Equipment
N. Management Services—Factors, Consulting Engineers, Insurance, Personnel Facilities, Plant Sites, Etc.
O. Materials and components for Machinery and Equipment
P. Materials Handling, Packaging, and Shipping Facilities
Q. Power Generation and Transmission (see also Electrical Equipment)
R. Weaving and Warp Preparation Equipment and Supplies
T. Yarn-Production Twisting, and Winding Equipment and Supplies

An * indicates additional data in the 1952-53 Pre-Filed Textile Catalog. This index is published as a convenience to the reader. Great care is taken to make it accurate, but Textile World assumes no responsibility for errors or omissions.

Acme Coppersmithing Co.	230	E
*Air-Perme-Ator Mfg. Co.	232	A
Alemite Div., Stewart-Warner Corp.	140	M
Allen-Bradley Co.	3rd Cover	F
Allen Mfg. Co.	241	O
*Allis-Chalmers Mfg. Co.	53 to 56	F Q
Alvey Conveyor Mfg. Co.	204	P
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American & Efird Mills, Inc.	247	G
*American Lava Corp.	163	L RT
American Lumber & Treating Co.	212	B
*American Monorail Co.	60	D
American Viscose Corp. (Yarns)	167	G
American Viscose Corp., Textile Chemical Dept.	87	C
*Appleton Machine Co.	36	E
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Armstrong Cork Co., (Roll Covering)	189	R
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*Atlas Electric Devices Co.	250	K
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Baldwin-Duckworth Div. of Chain Belt Co.	229	Q
Ballymore Co.	251	B
*Barber Colman Co., Textile Div.	249	R
Barco Mfg. Co.	201	H
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Bellows Co., The	202	H
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EDITOR
TEXTILE WORLD
330 West 42nd St.
New York 36, N. Y.

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Edroy Products Co.	251	N
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Fielden Inst. Div., Robertshaw-Fulton Controls Co.	216	K
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*Foster Machine Co.	42	T
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Gardner-Denver Co.	66	H
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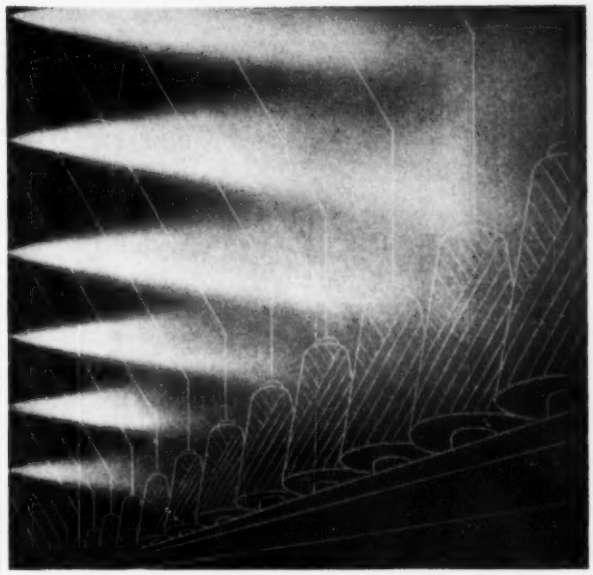

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*Sterling Ring Traveler Co	222	T
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*Stop-Motion Devices Corp	253	L
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*Torrington Co., The (Bearings)	191	Q
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*U. S. Rubber Co., Mechanical Goods Div	215	Q
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*Veeder-Root, Inc.	4th Cover	K
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*Warner & Swasey Co	73	T
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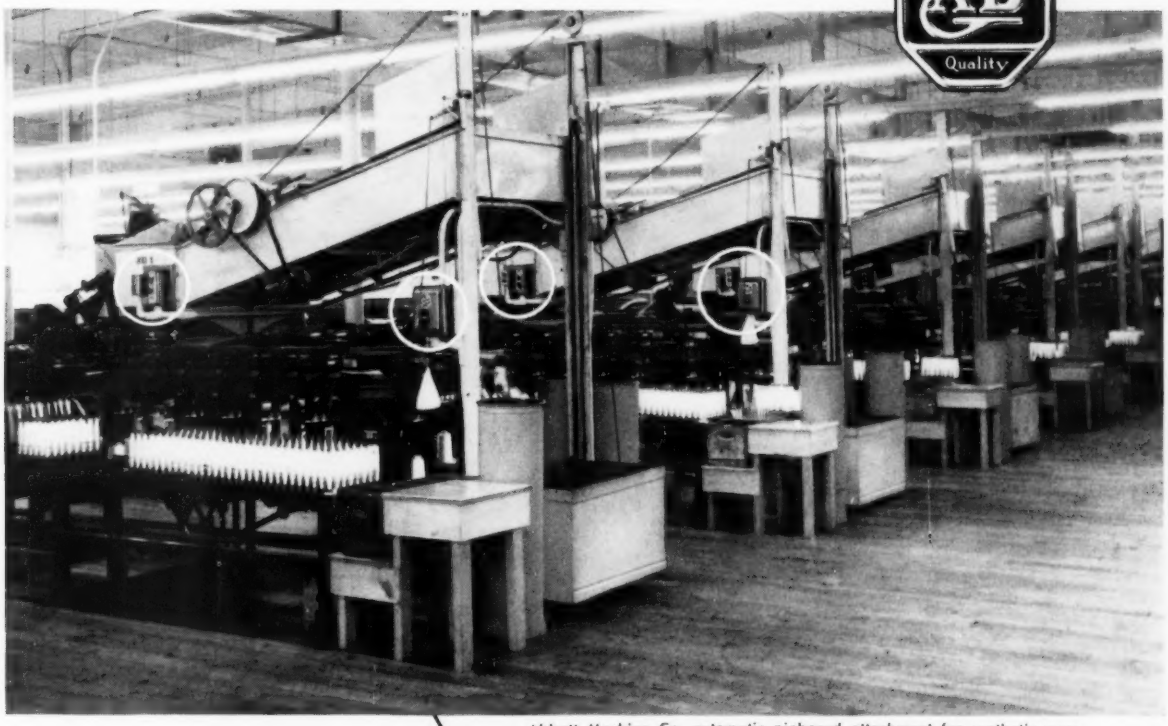

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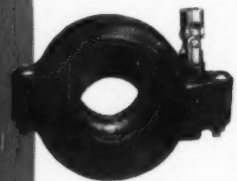
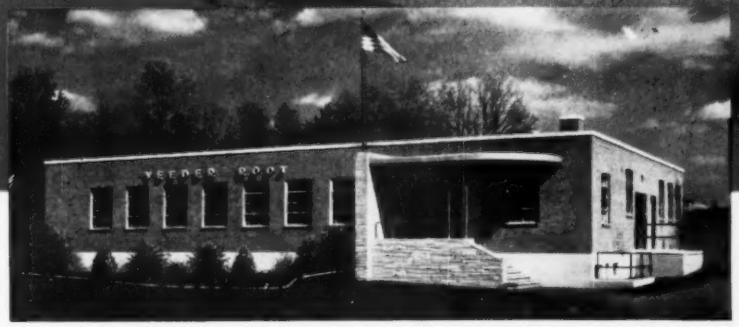
- BRASS BEARINGS on horizontal shafts.
- BRONZE OILITE BEARINGS on vertical drive shafts.



NEW PLASTIC CONNECTION (at left) . . . cuts installation time, maintenance costs . . . resists humidity, wear, vibration.

Yes, here again is V-R Value, and in fuller measure than ever before. See your nearest Veeder-Root office.



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